Operation Manual

Desktop Video

Blackmagicdesign

Mac OS X™

Windows™

Linux™

July 2013

Welcome to Desktop Video!

We hope you share our dream for the television industry to become a truly creative industry by allowing anyone to have access to the highest quality video.

Previously high end television and post production required investment in millions of dollars of hardware, however with Blackmagic video hardware, even 10 bit uncompressed is now easily affordable. We hope you get years of use from your new UltraStudio, DeckLink or Intensity and have fun working with some of the world's hottest television and design software!

This instruction manual should contain all the information you'll need on installing your Blackmagic video hardware. If you're installing a PCI Express card, it's always a good idea to ask a technical assistant for help if you have not installed hardware cards into computers before. As Blackmagic video hardware uses uncompressed video and the data rates are quite high, you'll need fast disk storage and a high-end computer.

We think it should take you approximately 10 minutes to complete installation. Before you install Blackmagic video hardware, please check our website at www.blackmagicdesign.com and click the support page to download the latest updates to this manual and Desktop Video driver software. Lastly, please register your Blackmagic video hardware when downloading software updates. We would love to keep you updated on new software updates and new features. Perhaps you can even send us your latest show reel of work completed on your Blackmagic video hardware and any suggestions for improvements to the software. We are constantly working on new features and improvements, so we would love to hear from you!

Grant Petty
CEO Blackmagic Design

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Desktop Video

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4 Getting Started

Introducing Desktop Video

Blackmagic Design's Desktop Video software includes drivers, plug-ins and applications for your UltraStudio, DeckLink or Intensity. You can use Desktop Video software by itself or else work directly within video software from companies including Adobe, Apple and Avid.

This manual takes you through the computer system requirements, how to install your video hardware and software, and how to use it with software from Blackmagic Design, Adobe, Apple and Avid. Connection diagrams and reference information for developers can be found at the back of the manual.

Your Computer's System Requirements

UltraStudio, DeckLink and Intensity are all designed to work with the highest quality uncompressed video. This high quality is exciting but also very demanding for your computer and disk storage. We recommend the following minimum computer system configurations.

All platforms require a minimum of 4 GB of RAM for SD, HD, 2K and Ultra HD 4K video. PCIe x1 lane cards should work in any slot. PCIe x4 lane cards require a x4 lane or faster PCI Express slot.

Mac OS X

Desktop Video software runs on the latest Lion and Mountain Lion versions of Mac OS X.

An Intel-based Mac Pro computer is required if your Blackmagic video hardware connects to the computer via a PCI Express slot.

An Intel-based Mac computer with a Thunderbolt™ port and cable are required if your Blackmagic video hardware connects to the computer via Thunderbolt.

Windows

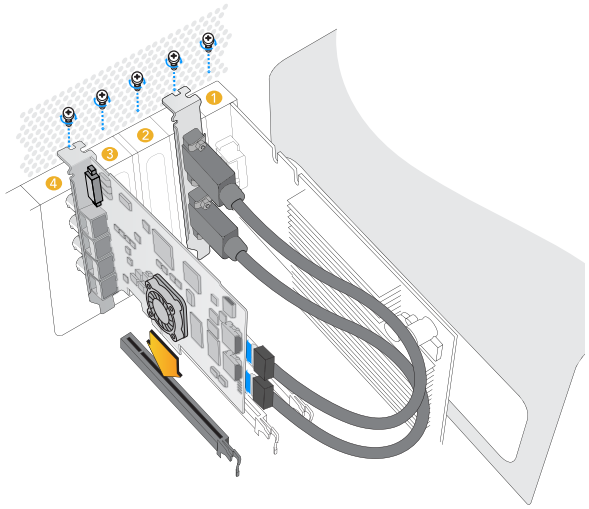
Desktop Video runs exclusively on 64-bit versions of Windows, with the latest service pack installed. Both Windows 7 and Windows 8 are supported.

An Intel-based PC with a Thunderbolt port and cable are required if your Blackmagic video hardware connects to the computer via Thunderbolt.

A USB 3.0 port using a Renesas chipset is required if your Blackmagic video hardware connects to the computer via USB 3.0.

Linux

Desktop Video runs on 32-bit and 64-bit x86 computers running Linux 2.6.23 or higher. Please refer to the release notes for the latest list of supported Linux distributions, package formats and software dependencies.



Install any model of Blackmagic PCIe card in a spare slot as shown in the above picture. Some cards include an HDMI bracket, which installs in any spare port, and connects to the rear of the card with the supplied HDMI cables.

How to Install your Blackmagic video hardware

This section guides you through how to install your Blackmagic video hardware into your computer.

Installing a card with a fiber optic module can be a little fiddly so we also include some tips on how to do it easily.

If your Blackmagic video hardware connects via USB 3.0, go straight to the USB 3.0 section. Blackmagic's USB 3.0 video products require a compatible Windows PC so you won't find instructions for Mac or Linux.

If your Blackmagic video hardware connects via Thunderbolt, go straight to the Thunderbolt section. Thunderbolt ports are found on the latest Mac OS X and Windows computers.

Installing a Blackmagic PCIe card

Please review the Adding PCI Express Cards section in your computer user manual for information on how to safely install PCI Express cards, including your DeckLink or Intensity card.

Step 1. Remove the power plug from the back of your computer and ensure that you are statically discharged by using an anti-static strap.

Step 2. Remove the side cover or chassis cover of your computer to gain access to the PCIe slots.

Step 3. Remove your Blackmagic PCIe card from the protective static bag, making sure you don't touch the gold connectors on the base of the card. These precautions should be taken when handling any PCI card. If you have a DeckLink Optical Fiber card, the fiber optic module needs to be temporarily removed to allow the card to be maneuvered into its slot.

Step 4. The product box or website should tell you if your Blackmagic PCIe card requires a x1, x4 or x8 lane PCIe slot. Locate a slot in your computer which is this speed or faster.

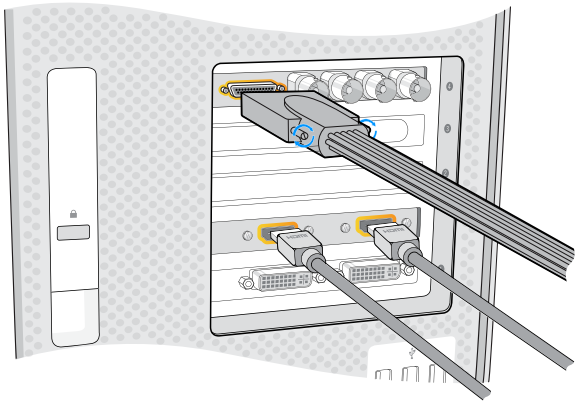
Step 5. Remove the metal port access cover from the desired PCIe slot.

Step 6. Insert your Blackmagic PCIe card and ensure that it clicks firmly into place.

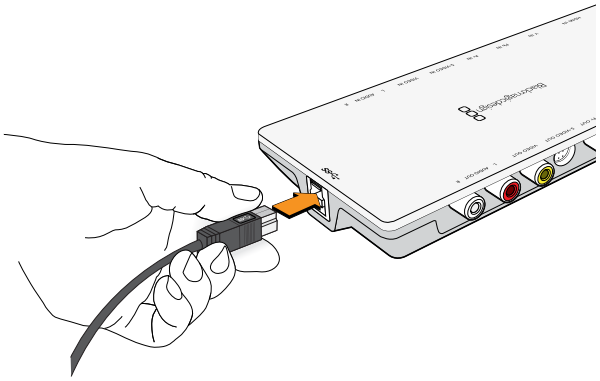
Step 7. If your Blackmagic PCIe card includes an HDMI bracket, insert the bracket into a spare PCIe slot. If your computer doesn't have a spare PCIe slot but does have a single-width graphics card, you should be able to insert the HDMI bracket into the spare port usually reserved for a double-width graphics card.

Step 8. Secure the card and HDMI bracket with the screws, bracket or clamp.

Step 9. If you have installed an HDMI bracket, loop the included HDMI cables around any other installed



Connect the breakout cable if one is supplied with your model of Blackmagic card. Some card models also include a HDMI bracket as pictured above.



USB 3.0 and Thunderbolt™ products connect to your computer with a single USB 3.0 or Thunderbolt cable.

cards and plug them into the rear of the DeckLink card.

Step 10. If you have a DeckLink Optical Fiber card, reinsert the fiber optic module into the card.

Step 11. Replace the cover of your computer and connect the breakout cable if one is supplied with your model of Blackmagic card.

Step 12. Reconnect the power and start up the computer.

Before connecting Blackmagic Design USB 3.0 hardware to your computer

Before using your Blackmagic video hardware, it is essential to run the latest USB 3.0 drivers and firmware for your USB 3.0 equipped motherboard. Currently the Renesas USB 3.0 host controller uPD720200 is used by all motherboards recommended by Blackmagic Design, and requires the installation of the latest Renesas Electronics USB 3.0 drivers and firmware. These updates can be found on the websites of motherboard and computer manufacturers as well as via third party driver websites.

Connecting Blackmagic video hardware to your Windows USB 3.0 computer

Step 1. If your Blackmagic video hardware includes an external power supply, connect it to the unit and switch on the power.

Step 2. Connect a SuperSpeed USB 3.0 cable between the unit and a dedicated USB 3.0 port on your computer.

Step 3. If Desktop Video software has previously been installed and offers to update the internal software, click Update and follow any onscreen instructions.

Step 4. Connect the breakout cable, if one is supplied with your model of Blackmagic video hardware, and plug the connectors into your video equipment.

Connecting Blackmagic video hardware to your computer with Thunderbolt

Step 1. If your Blackmagic video hardware includes an external power supply, connect it to the unit and switch on the power.

Step 2. Connect a Thunderbolt cable between the unit and a Thunderbolt port on your computer, or to a Thunderbolt disk array which is attached to your computer.

Step 3. If Desktop Video software has previously been installed and offers to update the internal software, click Update and follow any onscreen instructions.

Step 4. Connect the breakout cable, if one is supplied with your model of Blackmagic video hardware, and plug the connectors in to your video equipment.

Install Blackmagic Desktop Video Software
Important Information
Introduction
Read Me
License
Destination Select
Installation Type
Installation
Summary
About Desktop Video Software
This software includes everything you need to set up your DeckLink, Multibridge, Intensity cards and H.264 Pro Recorder for any task in your facility.
What's new in Desktop Video 8.2
• Media Express 3 public beta 3
• Fixed frame by frame audio scrubbing in Premiere Pro CS 5.5
• Fixed Sub-clip playback issue in Premiere Pro CS 5.5
• Improved Closed Caption support
• Added DVCPRO presets in Premiere Pro CS 5.5
Minimum system requirements for Mac OS X
DeckLink, Intensity and Multibridge products
• Mac OS X 10.6.7 Snow Leopard and QuickTime 10 or later.
• A suitable PCIe slot - PCIe x1 lane cards should work in any slot. PCIe x4 lane cards require a x4 lane or faster PCI Express slot.
• 4 GB of system memory.
H.264 Pro Recorder
Print...
Save...
Go Back
Continue

Follow install prompts.

Select Destination.

Install the Blackmagic Design Software

After installing your hardware, the next step is to install the Blackmagic Design Desktop Video software. Please jump to the installation instructions for Mac OS X, Windows and Linux in this section.

Installing Blackmagic Desktop Video Drivers on Mac OS X

Before installing any software you will need administrator privileges.

Step 1. Ensure you have the very latest driver. Visit www.blackmagicdesign.com/support

Step 2. Open the "Desktop Video Installer" folder from the disc or downloaded disk image and launch the "Desktop Video Installer" installer.

Step 3. Click Continue, Agree and Install buttons and the software will be installed on your system.

Step 4. Now restart your computer to enable the new software drivers.

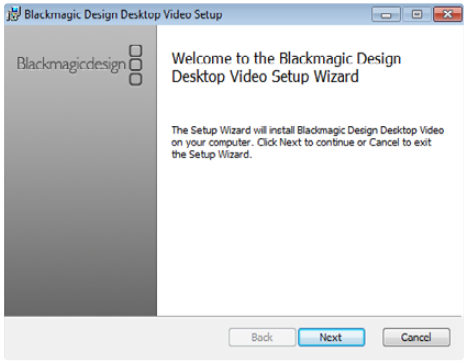
Plugins and Applications that are installed

The Desktop Video software installs the following components:

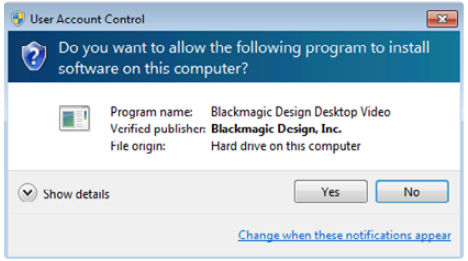
- Blackmagic Desktop Video drivers
- Blackmagic Design system preference
- Blackmagic Design LiveKey
- Blackmagic Media Express
- Blackmagic Multibridge Utility
- Blackmagic QuickTime™ codecs
- Blackmagic Disk Speed Test
- Adobe® Premiere Pro, After Effects, Photoshop presets and plug-ins
- Apple Final Cut Pro™ 7 Easy Setups, presets and enablers
- Apple Final Cut Pro™ X plug-ins
- Avid Media Composer 7.x plug-ins

Automatic Updates

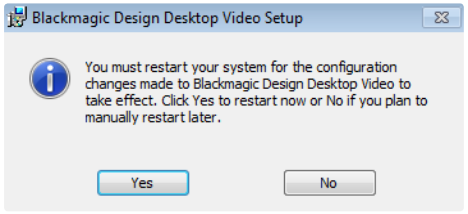
After your Mac has restarted, the software will check the Blackmagic video hardware to see what internal software the hardware contains. If the internal software version does not match the driver version, Desktop Video will offer to update the internal software. This is automatic and all you need to do is click OK to start the update. After the internal software has updated, restart your Mac to complete the process.


Blackmagic Design Desktop Video Setup
Blackmagicdesign
Welcome to the Blackmagic Design Desktop Video Setup Wizard
The Setup Wizard will install Blackmagic Design Desktop Video on your computer. Click Next to continue or Cancel to exit the Setup Wizard.
Back
Next
Cancel

Desktop Video Setup Wizard


User Account Control
Do you want to allow the following program to install software on this computer?
Program name: Blackmagic Design Desktop Video
Verified publisher: Blackmagic Design, Inc.
File origin: Hard drive on this computer
Show details
Yes
No
Change when these notifications appear

Click "Yes".


Blackmagic Design Desktop Video Setup
You must restart your system for the configuration changes made to Blackmagic Design Desktop Video to take effect. Click Yes to restart now or No if you plan to manually restart later.
Yes
No

Restart your PC!

Installing Blackmagic Desktop Video Drivers on Windows

Step 1. Ensure you have the very latest driver. Visit www.blackmagicdesign.com/support

Step 2. Open the "Desktop Video" folder and launch the "Desktop Video" installer.

Step 3. The drivers will now be installed on your system. An alert will appear: "Do you want to allow the following program to install software on this computer?" Click Yes to continue.

Step 4. You will see a dialog bubble saying "found new hardware" and the hardware wizard will appear. Select "install automatically" and the system will find the required Desktop Video drivers. You will then receive another dialog bubble saying "your new hardware is ready for use."

Step 5. Now restart your computer to enable the new software drivers.

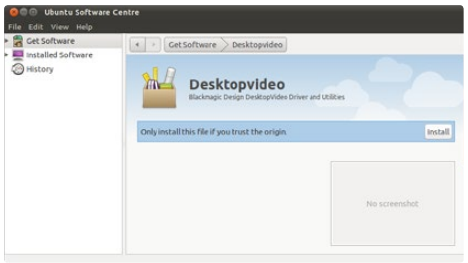
Plugins and applications that are installed

The Desktop Video software installer installs the following components:

- Blackmagic Desktop Video drivers
- Blackmagic Design Control Panel
- Blackmagic Design LiveKey
- Blackmagic Media Express
- Blackmagic Multibridge Utility
- Blackmagic AVI and QuickTime™ codecs
- Blackmagic Disk Speed Test
- Adobe® Premiere Pro, After Effects, Photoshop presets and plug-ins
- Avid Media Composer 7.x plug-ins
- eyeon Fusion plug-ins

Automatic updates

After your computer has restarted, the software will check the Blackmagic video hardware to see what internal software the hardware contains. If the internal software version does not match the driver version, Desktop Video will offer to update the internal software. This is automatic and all you need to do is click OK to start the update. After the internal software has updated, restart your computer to complete the process.



Desktop Video software ready to be installed from the Ubuntu Software Center

Installing Blackmagic Desktop Video Drivers on Linux

Step 1. Download the latest Desktop Video software for Linux from www.blackmagicdesign.com/support

Step 2. Open the "Desktop Video" folder and locate and open the "Desktop Video" package for your Linux distribution. Refer to the ReadMe file for the latest list of Linux distributions for which can be installed from a graphical user interface.

Step 3. Click the "Install" button and wait for the progress bar to complete.

Step 4. If there are messages about missing dependencies, ensure they are installed first and then rerun the Desktop Video installer.

Step 5. When finished, the installer will return to the same screen.

Step 6. Restart the computer to enable the drivers or type the following command:

```
# modprobe blackmagic
```

If you cannot find a native Desktop Video package for your Linux distribution, or if you prefer to install from a command line, refer to the ReadMe file for detailed installation instructions.

If you encounter any errors during the installation, refer to the ReadMe file for help.

Plugins and Applications that are installed

Desktop Video software installs the following components:

- Blackmagic Desktop Video drivers
- Blackmagic Design Control Panel
- Blackmagic Media Express
- Blackmagic AVI codecs

Updates

After your computer has restarted, the drivers will check the Blackmagic video hardware to see what internal software the hardware contains. If the internal software version does not match the driver version, Desktop Video will prompt you to update. Type the following command in terminal to find out the card ID of any cards that need updating:

BlackmagicFirmwareUpdater status

A message similar to the following will appear:

/dev/blackmagic/card0 [DeckLink HD Extreme 3] UPDATED

/dev/blackmagic/card1 [DeckLink HD Extreme 3] NEEDS_UPDATE

Note the ID of the card that needs to be updated and then update the firmware by typing:

BlackmagicFirmwareUpdater update <card_id> (1 in this case)

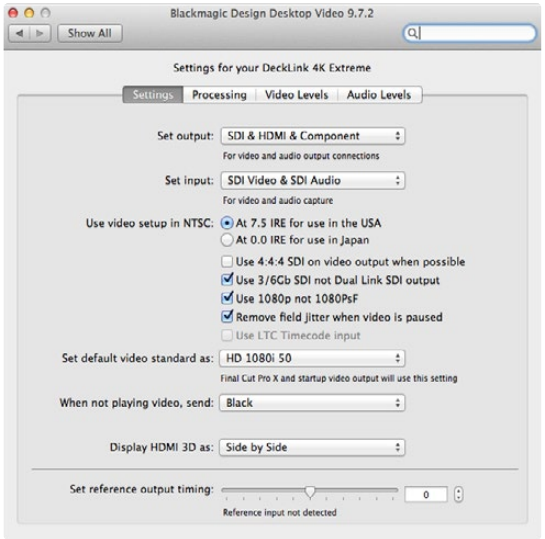
Using Blackmagic System Preferences

Blackmagic system preferences provide a central location so you don't need to configure the same settings in each video application that you use, for example down conversion.

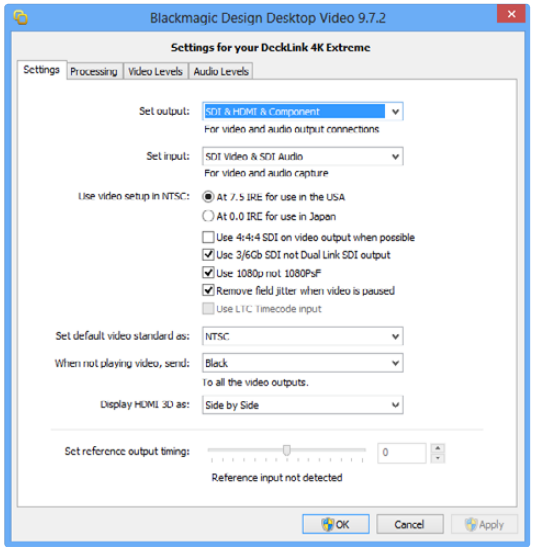
- On Mac OS X, open the System Preferences and look in the “Other” category to locate the Blackmagic Design icon. Click the Blackmagic Design icon to gain access to the settings.
- On Windows 7 and Windows 8, open the Control Panel and click on the “Hardware and Sound” category to reveal the Blackmagic Design Control Panel. Click the Blackmagic Design Control Panel to gain access to the settings.
- On Linux, go to "Applications" and then "Sound and Video" to locate the Blackmagic Control Panel. Double-click on the Blackmagic Control Panel to gain access to the settings. All features can be controlled by your own software using the Blackmagic SDK.

Different Blackmagic video hardware models have different features. Only those system preferences supported by your hardware model will be active and available to change.

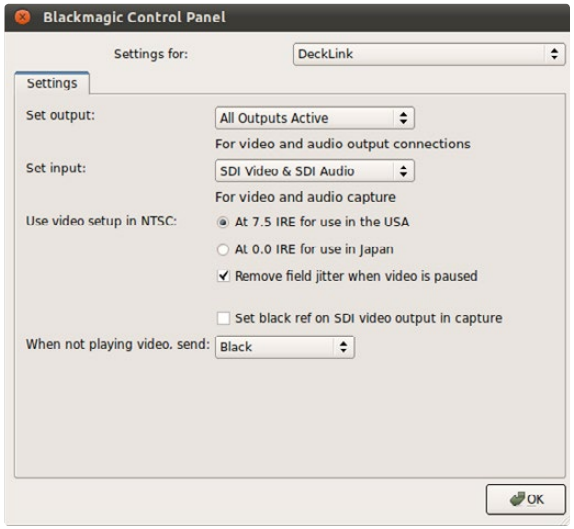
The following section takes you through the Blackmagic system preferences you might see when using Blackmagic video hardware.


Blackmagic Design Desktop Video 9.7.2
Show All
Settings for your DeckLink 4K Extreme
Settings
Processing
Video Levels
Audio Levels
Set output:
SDI & HDMI & Component
For video and audio output connections
Set input:
SDI Video & SDI Audio
For video and audio capture
Use video setup in NTSC:
At 7.5 IRE for use in the USA
At 0.0 IRE for use in Japan
Use 4:4:4 SDI on video output when possible
Use 3/6Gb SDI not Dual Link SDI output
Use 1080p not 1080PsF
Remove field jitter when video is paused
Use LTC Timecode input
Set default video standard as:
HD 1080i 50
Final Cut Pro X and startup video output will use this setting
When not playing video, send:
Black
Display HDMI 3D as:
Side by Side
Set reference output timing:
0
Reference input not detected

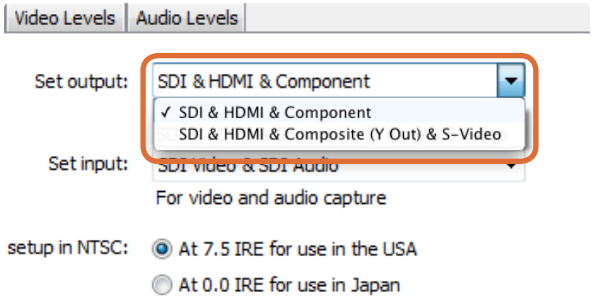
Blackmagic Design system preferences in Mac OS X



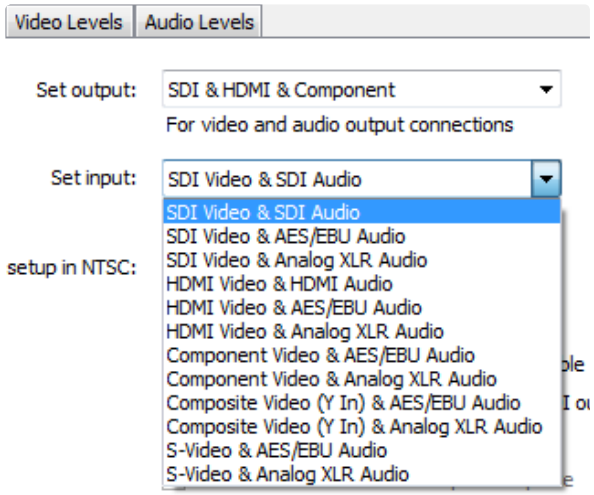
Blackmagic Design Control Panel in Windows


Blackmagic Control Panel
Settings for:
DeckLink
Settings
Set output:
All Outputs Active
For video and audio output connections
Set input:
SDI Video & SDI Audio
For video and audio capture
Use video setup in NTSC:
At 7.5 IRE for use in the USA
At 0.0 IRE for use in Japan
Remove field jitter when video is paused
Set black ref on SDI video output in capture
When not playing video, send:
Black
OK

Blackmagic Design Control Panel in Ubuntu Linux


Video Levels
Audio Levels
Set output:
SDI & HDMI & Component
✓ SDI & HDMI & Component
SDI & HDMI & Composite (Y Out) & S-Video
Set input:
For video and audio capture
setup in NTSC:
At 7.5 IRE for use in the USA
At 0.0 IRE for use in Japan

Video and Audio output connections.


Video Levels
Audio Levels
Set output:
SDI & HDMI & Component
For video and audio output connections
Set input:
SDI Video & SDI Audio
SDI Video & SDI Audio
SDI Video & AES/EBU Audio
SDI Video & Analog XLR Audio
HDMI Video & HDMI Audio
HDMI Video & AES/EBU Audio
HDMI Video & Analog XLR Audio
Component Video & AES/EBU Audio
Component Video & Analog XLR Audio
Composite Video (Y In) & AES/EBU Audio
Composite Video (Y In) & Analog XLR Audio
S-Video & AES/EBU Audio
S-Video & Analog XLR Audio
setup in NTSC:

Video and Audio input connections.

Video and Audio Output connections

All of the video and audio outputs of Blackmagic video hardware are active all of the time. On some models you can choose between component analog video, S-Video or composite analog video.

The SDI, Optical Fiber SDI, HDMI and component analog video outputs support HD and SD video. S-Video and composite analog video do not support high definition video. S-video may require the use of an inexpensive S-video adapter cable.

Switchable Audio Output

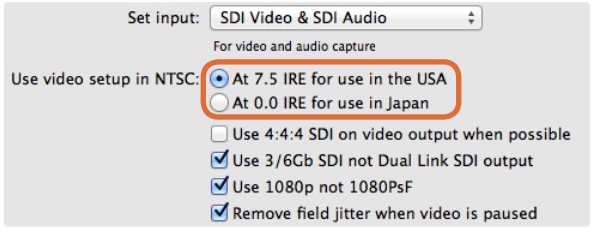
Some models have switchable audio outputs. You can choose to output:

- 4 analog and 2 AES/EBU audio channels, or
- 2 analog and 6 AES/EBU audio channels

Video and Audio Input connections

Your Blackmagic video hardware may support some or all of the following combinations:

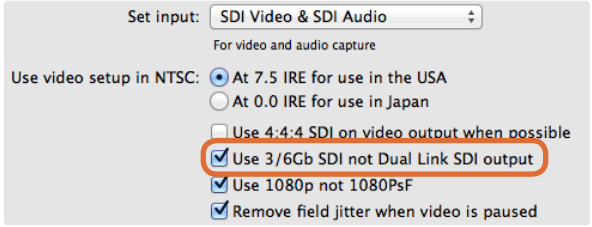
- SDI Video & SDI Audio
- SDI Video & AES/EBU Audio
- SDI Video & Analog XLR Audio
- Optical SDI Video & Optical SDI Audio
- HDMI Video & HDMI Audio
- HDMI Video & AES/EBU Audio
- HDMI Video & Analog XLR Audio
- Component Video & AES/EBU Audio
- Component Video & Analog XLR Audio
- Composite & AES/EBU Audio
- Composite & Analog XLR Audio
- S-Video & AES/EBU Audio
- S-Video & Analog XLR Audio


Set input: SDI Video & SDI Audio
For video and audio capture
Use video setup in NTSC:
At 7.5 IRE for use in the USA
At 0.0 IRE for use in Japan
Use 4:4:4 SDI on video output when possible
Use 3/6Gb SDI not Dual Link SDI output
Use 1080p not 1080PsF
Remove field jitter when video is paused

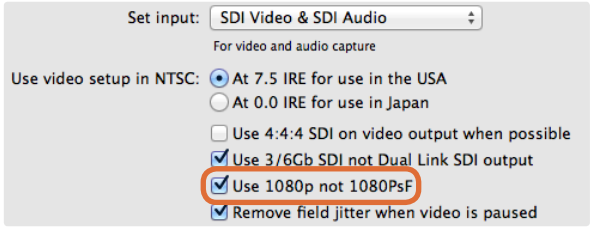
NTSC Setup.

Set input: SDI Video & SDI Audio
For video and audio capture
Use video setup in NTSC:
At 7.5 IRE for use in the USA
At 0.0 IRE for use in Japan
Use 4:4:4 SDI on video output when possible
Use 3/6Gb SDI not Dual Link SDI output
Use 1080p not 1080PsF
Remove field jitter when video is paused

Output 4:4:4 color mode


Set input: SDI Video & SDI Audio
For video and audio capture
Use video setup in NTSC:
At 7.5 IRE for use in the USA
At 0.0 IRE for use in Japan
Use 4:4:4 SDI on video output when possible
Use 3/6Gb SDI not Dual Link SDI output
Use 1080p not 1080PsF
Remove field jitter when video is paused

Single Link/Dual Link switch


Set input: SDI Video & SDI Audio
For video and audio capture
Use video setup in NTSC:
At 7.5 IRE for use in the USA
At 0.0 IRE for use in Japan
Use 4:4:4 SDI on video output when possible
Use 3/6Gb SDI not Dual Link SDI output
Use 1080p not 1080PsF
Remove field jitter when video is paused

Progressive HD1080 video playback switch

NTSC setup

The NTSC composite video used in the USA, and some other countries, uses 7.5 IRE setup. If you're working in Japan and countries that don't use this setup, leave this set to 0 IRE setup. PAL and high definition standards do not use this setup.

Output 4:4:4 color mode

While most users work with 4:2:2 video, you will need to Select 4:4:4 on video output if you wish to play out 4:4:4 video, otherwise the video will show weird pink and green colors. 1080p50/60 video will always be output as 4:2:2.

When 4:4:4 video output is enabled, the following features are not available:

- simultaneous HD and down converted SD video output
- down converted analog video output.

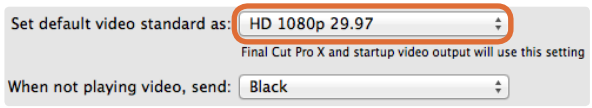
Single Link/Dual Link switch

When working with high bandwidth video formats such as 1080p60 or any 4:4:4 format, choose between single link 3G-SDI and dual link HD-SDI.

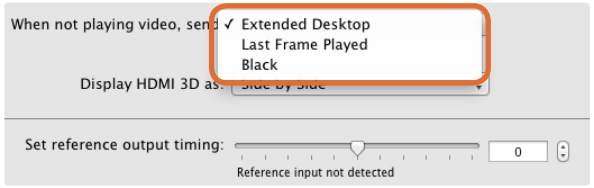
When working in Ultra HD 4K formats, choose between single link 6G-SDI and dual link 3G-SDI.

Progressive HD1080 video playback switch

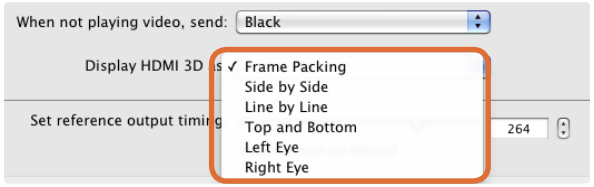
Choose between 1080PsF and 1080p on playback.


Set default video standard as:
HD 1080p 29.97
Final Cut Pro X and startup video output will use this setting
When not playing video, send:
Black

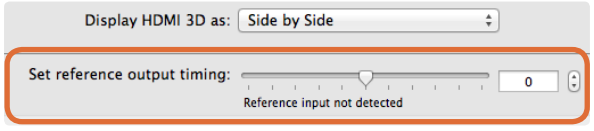
Set the default video standard to match your Final Cut Pro X project or to capture with your WDM program



Frame output switch



HDMI 3D monitoring formats



Genlock timing adjustment.

Remove Field Jitter

When interlaced video is paused on old CRT monitors, eliminate field flicker by only displaying a single field. We do not recommend using this option with modern flat screens.

Set default video standard

On Mac OS X, if you want to use broadcast monitoring with Final Cut Pro X, set the video standard in these preferences so that it matches your Final Cut Pro X project. This setting is exclusively used by Final Cut Pro X. If you also have the extended desktop feature enabled, setting the default video standard will also set the video standard for the extended desktop at startup time.

On Windows, if you want to capture video with any program that supports WDM (Windows Driver Model), you'll need to set the default video standard so it matches the video you want to capture. If your program supports WDM, you will usually find "Blackmagic WDM Capture" listed as a video source option in the program's video capture preferences. Setting the video standard within the preferences of the WDM program will work with most WDM programs. However if any problems are encountered with capturing video, try using the Blackmagic Design Control Panel to set the default video standard instead.

Frame output switch

If you have switched out of a video application and video is no longer being played, this setting determines whether your Blackmagic video hardware will output black or the last played frame of video or an extended desktop.

If you are adjusting LUTs on some Blackmagic models, set this option to Last Played Frame so you can observe the effect of any adjustment to LUTs.

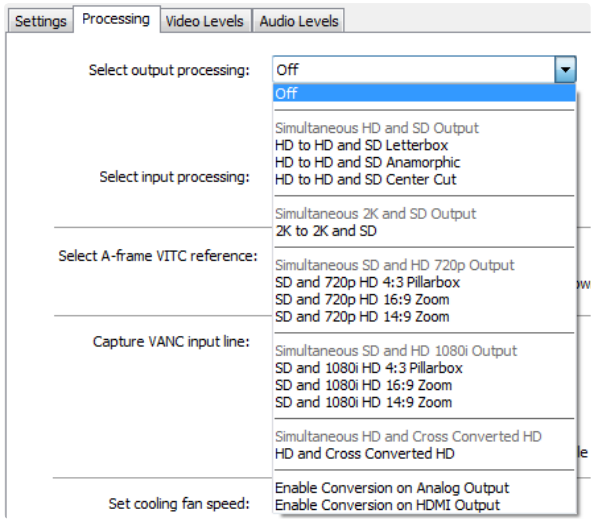
The extended desktop feature is supported on some Blackmagic models. Enabling or disabling the feature requires a restart of the computer. It's important that you set the extended desktop to the same standard as your video capture and playback, or you will get slower switching between capture and playback modes, as the monitors need to re-lock.

HDMI monitoring formats in 3D mode

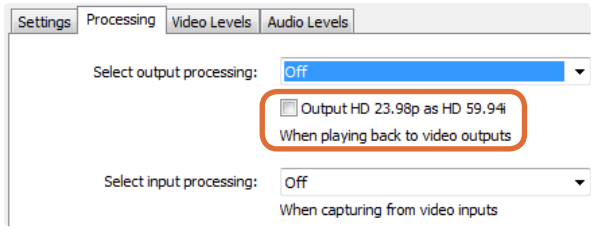
When monitoring 3D stereoscopic video, select a format that is supported by your HDMI display: Frame Packing, Side by Side, Line by Line, Top and Bottom, Left Eye or Right Eye.

Reference Output Timing

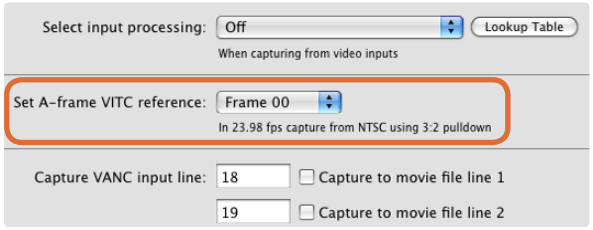
A reference signal may also be known as genlock, black burst, house sync or tri-sync. If you have reference connected but your picture is rolling, adjust the "Set reference output timing" until the picture locks and is no longer rolling on the Blackmagic video output.


Settings
Processing
Video Levels
Audio Levels
Select output processing:
Off
Off
Simultaneous HD and SD Output
HD to HD and SD Letterbox
HD to HD and SD Anamorphic
HD to HD and SD Center Cut
Select input processing:
Simultaneous 2K and SD Output
2K to 2K and SD
Select A-frame VITC reference:
Simultaneous SD and HD 720p Output
SD and 720p HD 4:3 Pillarbox
SD and 720p HD 16:9 Zoom
SD and 720p HD 14:9 Zoom
Capture VANC input line:
Simultaneous SD and HD 1080i Output
SD and 1080i HD 4:3 Pillarbox
SD and 1080i HD 16:9 Zoom
SD and 1080i HD 14:9 Zoom
Simultaneous HD and Cross Converted HD
HD and Cross Converted HD
Enable Conversion on Analog Output
Enable Conversion on HDMI Output
Set cooling fan speed:

HDTV Up/Down Converter output processing.



Output HD 23.98PsF at HD 59.94i



Set the A-Frame VITC Reference when performing 3:2 pulldown.

Up/Down/Cross Conversion

The Desktop Video drivers can be used to downconvert high definition to NTSC or PAL video in real time during capture or playback. They also provide upconversion on capture. Select the desired option from the output or input processing menus.

Some Blackmagic video hardware models support simultaneous down conversion on output such as HD & SD or 2K & SD. Simultaneous down conversion introduces a 2 frame delay on the SD-SDI output. To ensure accuracy, adjust the playback/timecode offset options when performing an insert or assemble edit to tape with Final Cut Pro, Premiere Pro or Blackmagic Media Express.

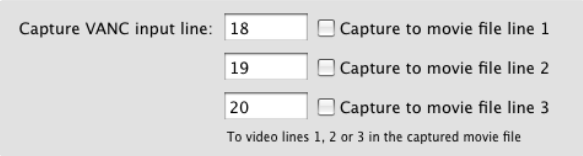
Analog video outputs are also down converted so you can always see video on an S-Video or composite analog monitor. Component analog video can be switched between HD or SD output. Choose to Enable Conversion on Analog Output, if you wish to view component analog standard definition video output, when simultaneous down conversion is enabled.

Output HD 23.98PsF at HD 59.94i (Windows only)

23.98 fps is a common film frame rate but support for this frame rate in SDI and analog monitors is rare. Enabling this option will apply 3:2 pulldown processing so that HD 23.98 PsF video is output as HD 59.94i. Almost all HD monitors support HD 59.94i.

VITC Reader A Frame - Reverse 3:2 Pulldown

This option decodes the VITC and uses it to correctly locate the A-frame when performing reverse 3:2 pulldown while capturing video at 23.98fps. Carefully set the correct A-frame VITC reference to match the timecode on tape. Selecting the wrong A-frame will generate incorrect presentation of fields and frames.


Capture VANC input line:
18
Capture to movie file line 1
19
Capture to movie file line 2
20
Capture to movie file line 3
To video lines 1, 2 or 3 in the captured movie file

VANC preferences.

Preserving Blanking Data or VANC

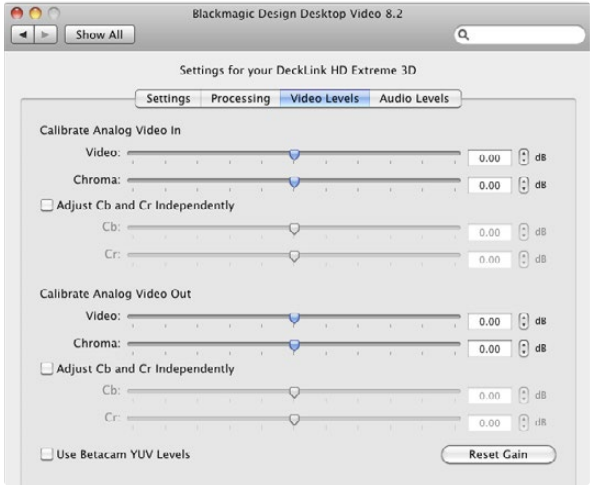
This feature lets you use up to 3 video lines at the top of a captured movie file to store any 3 lines from vertical blanking. This allows 3 line timecode, VITC (vertical interval test signals) subtitle info or any other VANC data to be preserved during capture. These lines are then inserted back into the video blanking when the file is played back.

To preserve VANC data, select the VANC and 3:2 Pulldown tab and tick the On check box for video line 1, 2 or 3 depending on how many blanking lines you want to capture.

Video file line 1 needs to be enabled for lines 2 and 3 to work.

Because these lines can be passed to the application, a developer could write software to read the VANC data and use it for various purposes, e.g. 3-line timecode and audio chasing, or other uses.

An example of VANC data is 3-line timecode, which uses lines 18, 19, and 20 in NTSC or lines 19, 20 and 21 in PAL. 3-line timecode, as used in AATON™ equipped telecine suites, featuring audio timecode and keycode information along with the normal timecode numbers.



Video levels

Video Levels

The video processing amplifier (Video Proc Amp) is used to adjust analog video and chroma levels and ideally should always be used in conjunction with a waveform monitor. The option to Calibrate Analog Video In is only available if the Set Input option in the Settings tab is set to analog video input.

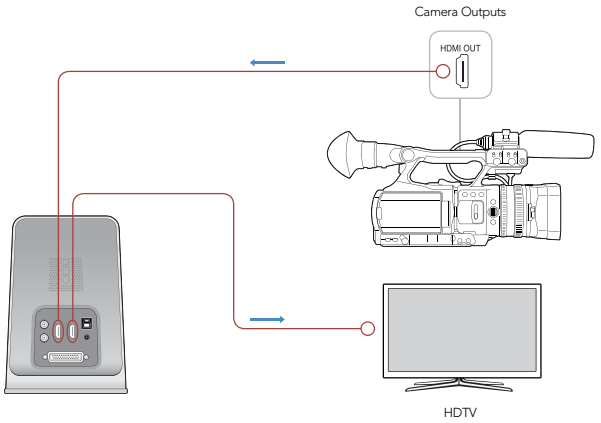
By default, Blackmagic products use SMPTE component analog levels as almost all analog video monitors and modern video equipment use SMPTE levels. Enable the checkbox "Use Betacam YUV Levels" if working with Sony Betacam SP decks. If in doubt, try a test capture and you should see a very noticeable brightness shift if you choose the wrong levels.

Audio Levels

The audio processing amplifier (Audio Proc Amp) is used to raise or lower audio signals. Analog audio channels can be adjusted independently from each other. AES/EBU audio channels are raised or lowered together.

Professional analog audio levels and XLR audio connectors are standard on UltraStudio and DeckLink models. If you need to connect to consumer audio equipment with analog RCA inputs, enable the option to Use HiFi Audio Levels and use an inexpensive XLR to RCA adapter for each audio connection. Intensity models always have this option enabled as they exclusively use HiFi audio levels and RCA connections for analog audio.

Capturing and Playing back Video



Connect a video monitor and source to your Blackmagic video hardware

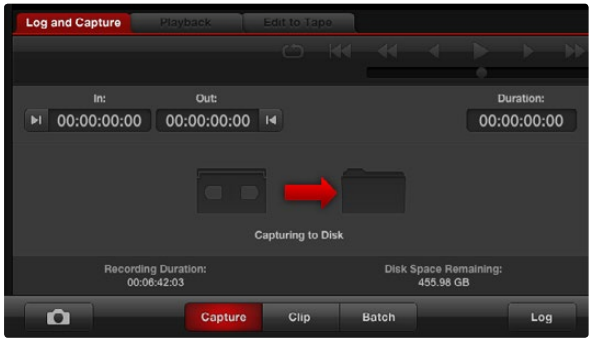
It's a good idea to run a quick test to ensure you can capture and play back video before you need to use your Blackmagic video hardware for anything important:

- Connect a video monitor or TV to the video output of your Blackmagic video hardware. An HDMI TV is very convenient for this test as both video and audio can be monitored without needing external audio connections.
- Connect a video source to the video input of your Blackmagic video hardware, especially a camera or deck. DVD players shouldn't be used for this test as they typically have copy protection on their HDMI and analog outputs so you won't be able to capture from them even if you're using home-made DVDs.
- Use the Blackmagic system preferences to set your video and audio connections for input and output. See the previous "Using Blackmagic System Preferences" section for details.
- Locate Blackmagic Media Express and open it:
  - on Mac OS X, look in the Applications folder.
  - on Windows 7, go to the Start menu and choose Programs>Blackmagic Design>Media Express on Windows 8, go to the Start page and click on the Blackmagic Media Express tile.
  - on Linux, go to Applications and look in the Sound and Video folder.

Video Playback test using Blackmagic Media Express

Import a test clip in to Media Express. If you see a message that the selected video format is not compatible with the current project, click "Don't save" to discard the current project and create a new project for the test clip.

Double-click the test clip and you should see the video on the monitor connected to the output of your Blackmagic video hardware. Audio output can also be monitored.

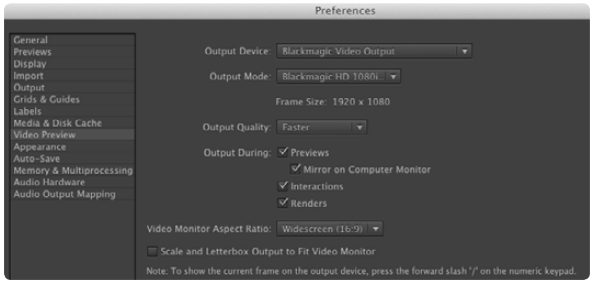


Click the "Capture" button to commence recording

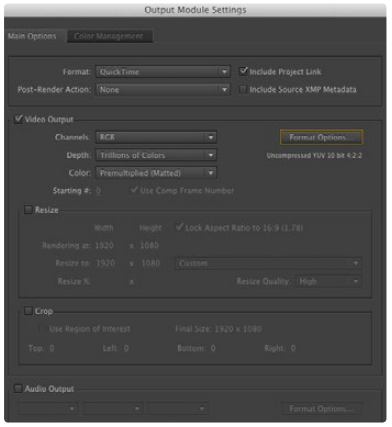
Video Capture test using Blackmagic Media Express

- Go to Media Express>Preferences on Mac OS X or Edit>Preferences on Windows or Linux.
- Select a project format which matches your video source and choose a capture file format.
- Set the storage location for your captured video and audio and choose whether to stop capture or playback if dropped frames are detected. Choose a compressed capture file format so you can capture to any disk.
- Close the Preferences and click on the Log and Capture tab. You should immediately see your video source in the video preview pane of Media Express.
- Click Capture to perform the capture test. Click Capture again to finish the test. Double-click on the captured clip in the Media List to play it back on screen and on the outputs of your Blackmagic video hardware.

Adobe After Effects CC



"Video Preview" preferences



"Output Module Settings" rendering options

Adobe After Effects CC

How to use Blackmagic as a preview output frame buffer

To allow your Adobe After Effects composition to be displayed in real-time through your Blackmagic video hardware, go to Preferences > Video Preview. Select Blackmagic Video Output and the appropriate Output Mode. This lets you view your Adobe After Effects compositions in the correct video colorspace on your broadcast monitor as you work. You will always see the correct color and interlace when working, and you don't have to wait until your composition is rendered to see what it looks like when output as video.

If you want to listen to audio through your Blackmagic hardware, go to System Preferences in Mac OS X or Control Panel on Windows and set Blackmagic Audio as your default sound output device. In After Effects, go to Preferences>Audio Hardware and make sure your audio output is now set to System Default Input/Output on Mac OS X or Blackmagic Audio on Windows.

Rendering

When you have completed your composition, you will need to render to a pixel format supported by your Blackmagic video hardware. You can render to a DPX image sequence or any of the following supported codecs:

QuickTime codecs on Mac OS X

- Blackmagic RGB 10 bit (uncompressed)
- Apple Uncompressed YUV 10 bit 4:2:2
- Apple Uncompressed YUV 8 bit 4:2:2
- Apple Photo - JPEG (compressed)
- Apple DV - NTSC (compressed)
- Apple DV - PAL (compressed)

Other codecs including ProRes and DVCPRO HD will be available if Final Cut Pro is installed on the same computer.

AVI codecs on Windows

- Blackmagic 10 bit 4:4:4 (uncompressed)
- Blackmagic 10 bit 4:2:2 (uncompressed)
- Blackmagic HD 8 bit 4:2:2 (uncompressed)
- Blackmagic SD 8 bit 4:2:2 (uncompressed)
- Blackmagic 8 bit MJPEG (compressed)

Other codecs including DVCPRO HD and DVCPRO50 will be available if Premiere Pro is installed on the same computer.

QuickTime codecs on Windows

- Blackmagic RGB 10 bit (uncompressed)
- Blackmagic 10 bit (uncompressed)
- Blackmagic 8 bit (uncompressed)
- Apple Photo-JPEG (compressed)
- Apple DV - NTSC (compressed)
- Apple DV - PAL (compressed)

Adobe Photoshop CC

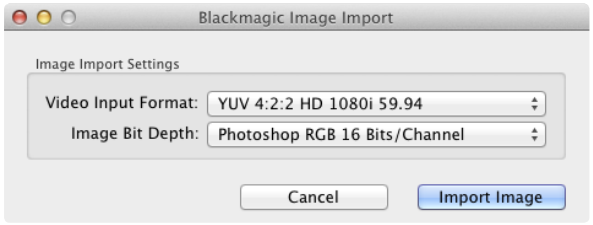


Image Capture

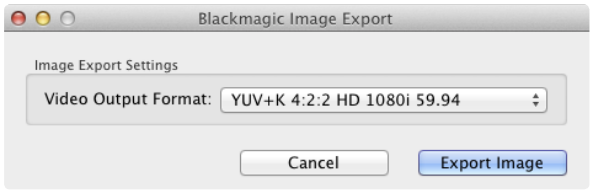


Image Export

Adobe Photoshop CC

How to grab and output video frames

Import an image into Photoshop

Step 1. From Photoshop select File > Import > Blackmagic Image Capture

Step 2. Select the "Video Input Format" and the "Image Bit Depth" and then click Capture Image

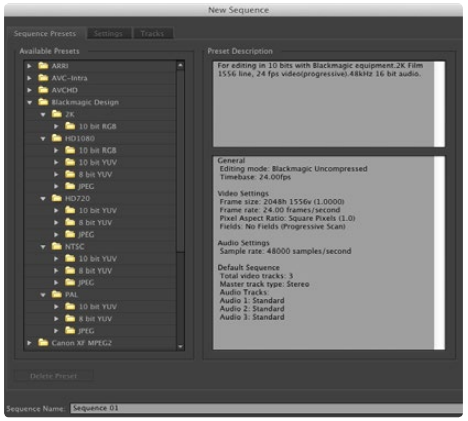
Export an image from Photoshop

Step 1. Select File > Export > Blackmagic Image Export

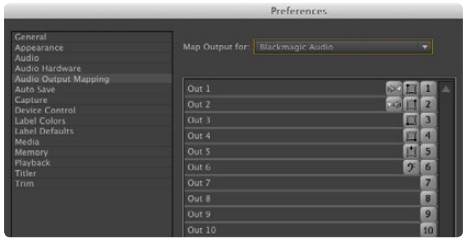
Step 2. Select Video Output Format and then click Output Image

Once you have set the options in the "Import" or "Export" windows, each subsequent Import and Export will not display the window, so you can grab and output frames much faster. However if you would like to change your import or export formats, hold the Option [Mac] or Ctrl [Win] key, when selecting import or export.

Adobe Premiere Pro CC



New Sequence



Audio Output Mapping

Adobe Premiere Pro CC

Setting up a Blackmagic Design project

Step 1. Launch Premiere Pro.

Step 2. Create a New Project and click on the Scratch Disks tab.

Step 3. Set the desired Location and Name for your project at the bottom of this window.

Step 4. Set the locations for your captured video, captured audio, video previews and audio previews.

Step 5. Click on the General tab and review the Video Rendering and Playback settings. If your graphics card is supported by Premiere Pro's Mercury Playback Engine, the Renderer option will be available and you should switch it to "Mercury Playback Engine GPU Acceleration".

Step 6. Set the Capture Format to Blackmagic Capture and click on the Settings [Mac] or Properties [Win] button to reveal the Blackmagic Capture Settings for your project. The Video Standard can be set to NTSC, PAL, HD720, HD1080 or 2K. The Video Format can be uncompressed or compressed. Now click OK.

Step 7. The New Sequence window will appear. To preserve maximum video quality, you'll need to create a full resolution uncompressed sequence. To do so, click the discovery triangle next to "Blackmagic Design" select a preset to match the video standard and choose from uncompressed 8 bit YUV, 10 bit YUV or 10 bit RGB. If you don't have the storage space or disk speed for uncompressed video, choose a JPEG sequence preset for a full resolution, open-standard codec.

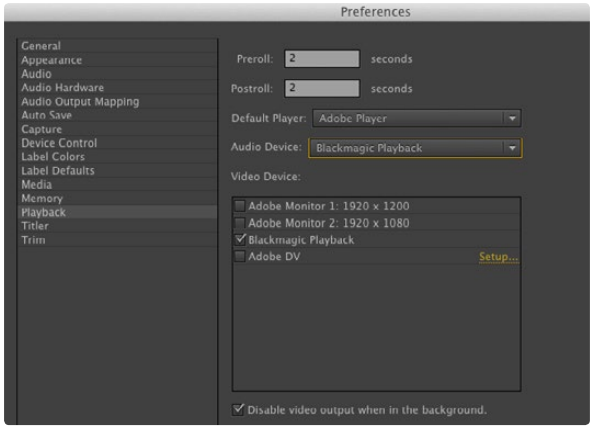
Premiere Pro also includes a variety of sequence presets for compressed and RAW camera formats. Any clips you drop in to a resulting sequence will be rendered in the compressed or RAW camera format. For example any clips dropped into a DVCPRO HD sequence will be rendered in the compressed DVCPRO HD format even if they are uncompressed clips.

When you have selected the desired sequence preset, give the sequence a name and click OK.

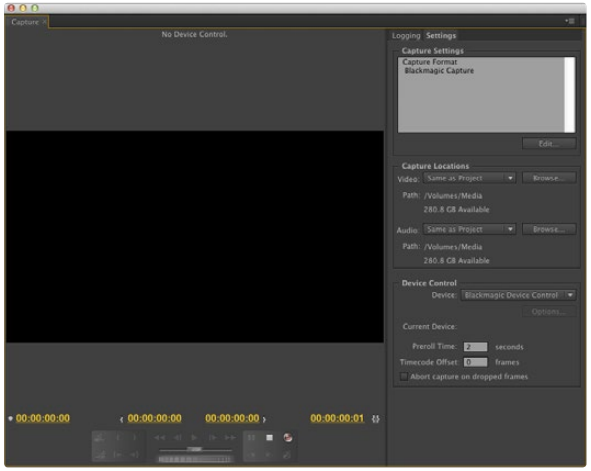
Audio

Blackmagic audio hardware needs to be selected each time a new project is created. Go to Preferences > Audio Hardware and set the Default Device to Blackmagic Audio.

Now go to Preferences > Audio Output Mapping and set "Map Output for" to "Blackmagic Audio". Configure the mix of the multi-channel audio as desired.



Playback



Capture

Device Control

Many Blackmagic Design capture and playback models feature RS-422 device control for controlling decks. Blackmagic Device Control needs to be selected each time a new project is created. Go to Preferences > Device Control and select "Blackmagic Device Control".

The Options button is disabled as the settings are automatically detected and configured when you choose Blackmagic Device Control.

Playback

Playback settings need to be selected each time a new project is created by going to Preferences > Playback.

The default player is Adobe Player but the Audio Device needs to be switched to "Blackmagic Playback".

Under "Video Device," enable the checkbox for "Blackmagic Playback" and ensure the other checkboxes are cleared. If working with other video applications such as After Effects, you'll usually want to enable the option to "Disable video output when in the background." Click OK to close out of the Preferences.

As a quick test to make sure everything is connected correctly, use the Premiere Pro test media (Bars and Tone or Universal Counter Leader). Drag your test media from within the Premiere Pro project and drop it on to the timeline. You should now see the image on both your computer desktop and the output of your Blackmagic video hardware. If you can't see any video on your Blackmagic output, check the connections again and ensure you have the correct output settings configured in the Blackmagic Design system preference. SDI, HDMI and analog outputs are always active.

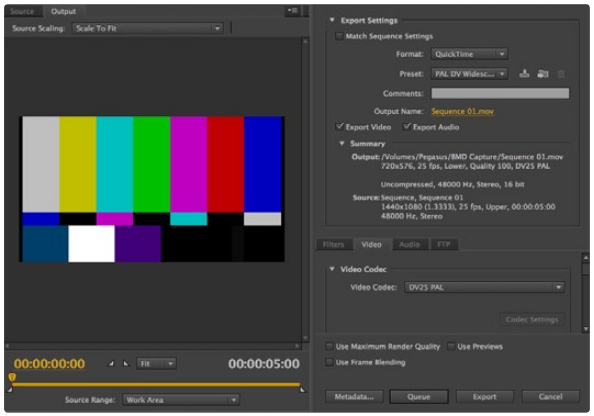
Capture

To capture choose: File > Capture [F5]

To immediately capture, or to capture from a non-controllable device, click the red record button [G].

If you wish to log the clip using RS-422 deck control, enter the desired In and Out points using either the Set In and Set Out buttons, or manually by typing the timecode and clicking Log Clip. The empty clip will now appear in the Project window. Repeat this until you have logged all of the clips you wish to batch capture.

To change the capture format, click on the Settings tab and then the Edit button. Ensure the Capture Format is set to Blackmagic Capture, click on the Settings [Mac] or Properties [Win] button and then change the Blackmagic Capture Settings as desired.



Export to Tape

Batch Capture

If you wish to batch capture using RS-422 deck control, select the clips you wish to capture by drag-selecting or shift-clicking each clip. Then choose: File > Batch Capture [F6]. To set handles on the clips, enable the option to Capture with handles and type the number of additional frames you require at the start and end of each clip.

Export to Tape

To export to tape via RS-422 deck control, select the sequence you require and then choose File > Export > Tape

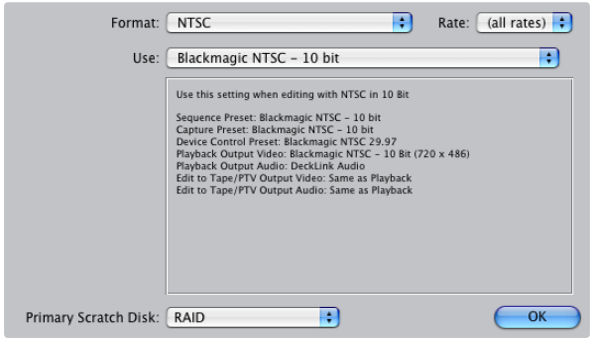
Insert editing requires unbroken timecode over the full length of the project which is to be laid to tape.

In assemble mode the tape needs only to be "blacked" until a point just beyond the start time of the project. As assemble editing erases the tape ahead of the record heads, it should not be used where other projects already exist on the tape after the out point of your edit.

When editing to tape, the software waits at the first frame of your project for the deck to drop into record at the predetermined timecode. Should you find that either the first frame of your program is repeated or lost, during the edit to tape procedure, you will need to adjust the playback offset to bring the deck and computer in sync. You should only need to do this once with any combination of deck and computer and the correct setting will be retained.

Now, simply enter the desired in point and offsets if required, and click OK [Mac] or Export [Win].

Apple Final Cut Pro 7


Format: NTSC
Rate: (all rates)
Use: Blackmagic NTSC – 10 bit
Use this setting when editing with NTSC in 10 Bit
Sequence Preset: Blackmagic NTSC – 10 bit
Capture Preset: Blackmagic NTSC – 10 bit
Device Control Preset: Blackmagic NTSC 29.97
Playback Output Video: Blackmagic NTSC – 10 Bit (720 x 486)
Playback Output Audio: DeckLink Audio
Edit to Tape/PTV Output Video: Same as Playback
Edit to Tape/PTV Output Audio: Same as Playback
Primary Scratch Disk: RAID
OK

Select a Blackmagic Easy Setup

Apple Final Cut Pro 7

"Easy Setups" for Final Cut Pro 7 are automatically installed if Final Cut Pro is installed before the Desktop Video software. Blackmagic video hardware is fully compatible with Apple's RT Extreme™ real time effects.

Setting up

Step 1. Launch Final Cut Pro 7 and the Easy Setup window will appear.

Step 2. Click on the popup menu and select the desired Blackmagic Easy Setup. For each video format (NTSC, PAL, HDTV and 2K) you will find a range of Blackmagic compressed and uncompressed file formats you can choose.

Step 3. Click on the popup menu named Primary Scratch Disk and select your disk array from the popup menu.

Step 4. Click OK and the Final Cut Pro interface will appear.

Playback

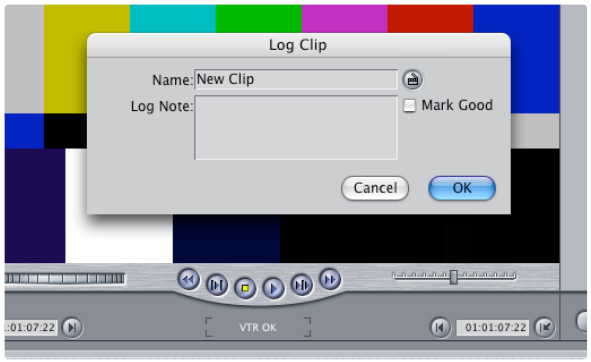
As a quick test to make sure everything is connected correctly, use the Blackmagic test media (bars and tone) which can be found on the installer CD or disk image. Find a test clip which matches the format of your project, e.g. NTSC 8 bit, and copy it to your disk array. Import this clip into your Final Cut Pro project and drop it into the timeline. You should now see the image on both your computer desktop and your Blackmagic output.

If you can't see any video on your Blackmagic output, check the connections again and ensure you have the correct output settings configured within Final Cut Pro by going to the View > Video Devices In the same menu, make sure "External Video" is set to "All Frames".

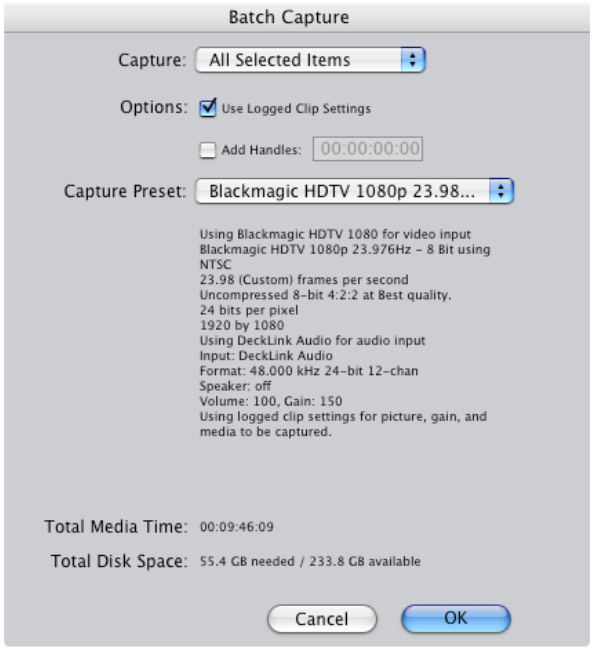
Capture from Non-Controllable devices

Many video sources including all kinds of modern cameras and disk recorders, as well as old cameras and VHS tape players, do not have any device control. For this reason, after selecting a Blackmagic Easy Setup, Final Cut Pro will sometimes warn that device control has been set to "non-controllable device". This is as expected. Click OK and then create a project with these settings.

To capture video from a non-controllable device, choose File > Log & Capture. (Command + 8). Press play on your video source and then press the Now button in the Log and Capture window. Final Cut Pro will show you a preview of the video you are capturing. Press the 'esc' key at the top left of your keyboard to stop capturing.



Naming a clip in the Log and Capture window


Batch Capture
Capture: All Selected Items
Options: Use Logged Clip Settings
Add Handles: 00:00:00:00
Capture Preset: Blackmagic HDTV 1080p 23.98...
Using Blackmagic HDTV 1080 for video input
Blackmagic HDTV 1080p 23.976Hz - 8 Bit using NTSC
23.98 (Custom) frames per second
Uncompressed 8-bit 4:2:2 at Best quality.
24 bits per pixel
1920 by 1080
Using DeckLink Audio for audio input
Input: DeckLink Audio
Format: 48.000 kHz 24-bit 12-chan
Speaker: off
Volume: 100, Gain: 150
Using logged clip settings for picture, gain, and media to be captured.
Total Media Time: 00:09:46:09
Total Disk Space: 55.4 GB needed / 233.8 GB available
Cancel
OK

Batch Capture

Capture from controllable devices with UltraStudio and DeckLink

To capture with RS-422 deck control, choose File > Log & Capture. (Command + 8)

Your video deck will respond in the same way as a clip in the timeline, via the "<spacebar>", "j", "k" and "l" keys.

To immediately capture, click the Capture Now button.

To log the clip, enter the desired "in" and "out" points using either the "i" and "o" keys on your keyboard, or manually by typing in the timecode and clicking Log Clip. The clip will appear in your browser with a diagonal red line indicating that it's "offline". Repeat this until you have logged all of the clips you wish to capture in a batch.

Batch Capture with UltraStudio and DeckLink

Select the clips you wish to capture by drag selecting or shift-click. Select File > Batch Capture or click on the Batch button in the "Logging" tab of the "Log & Capture" window. (Control + C)

Enable the "Add Handles" box if you wish to capture additional frames ("handles") before and after the "In" and "Out" points of a clip.

Recording to Tape with UltraStudio and DeckLink

Once you have captured your clips, edited them and applied any effects, you will want to record the completed project to tape.

One easy method is to select File > Print to Video (Control + M).

If you want to perform precise insert and assemble edits onto a timecode striped tape, select File > Edit to Tape.

Final Cut Pro X
Version 10.0
Loading Compressor support
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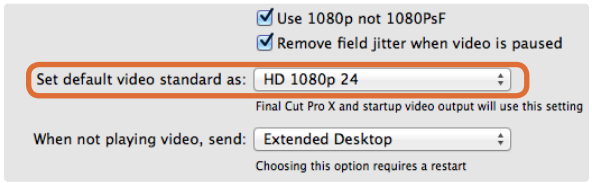
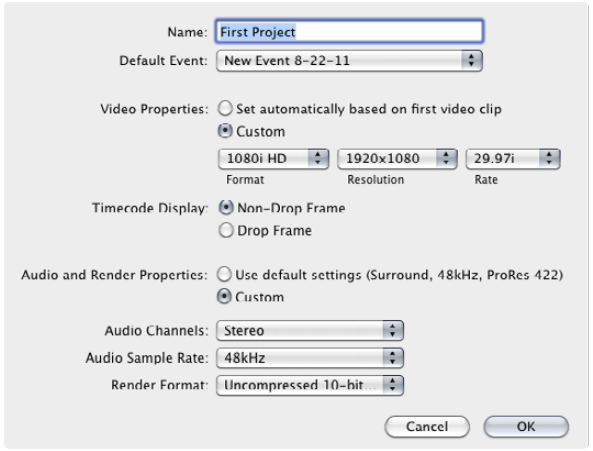
Apple Final Cut Pro X


Use 1080p not 1080PsF
Remove field jitter when video is paused
Set default video standard as: HD 1080p 24
Final Cut Pro X and startup video output will use this setting
When not playing video, send: Extended Desktop
Choosing this option requires a restart

Step2. Set the default video standard in the System Preferences to match your Final Cut Pro X project.



Step 6. Set the Audio and Render Properties to Custom.

Apple Final Cut Pro X

If you want to use Final Cut Pro X to play back video on an external video monitor or TV, you can use the broadcast monitoring feature of Final Cut Pro X 10.0.4 and newer to output your video through Blackmagic video hardware. You can also use as many as two computer monitors for the Final Cut Pro X interface.

Setting up Final Cut Pro X

Step 1. Ensure you are running Final Cut Pro X 10.0.4 or newer with the latest version of Mac OS X Lion or Mountain Lion.

Step 2. Open the System Preferences and click on Blackmagic Design. Go to the setting, "Set default video standard as" and then set the same standard that you will use in your Final Cut Pro X project, e.g. HD 1080i59.94. The standard should be the same as the video format of your clips.

Step 3. Launch Final Cut Pro X and create a new project.

Step 4. Type a name and choose a location for the new project.

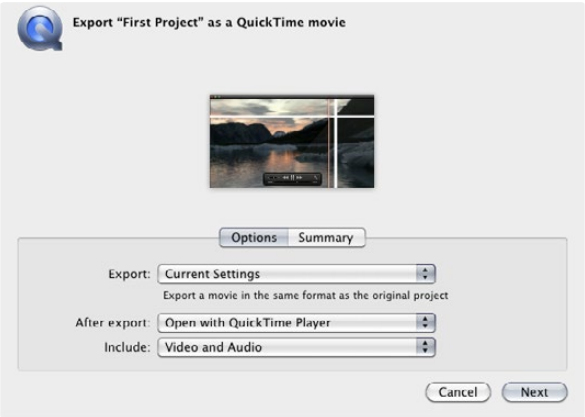
Step 5. Set the Video Properties to Custom and then set the format, resolution and frame rate to match the default video standard set in the Blackmagic Design Desktop Video system preferences.

Step 6. Set the Audio and Render Properties to Custom. Set the audio channels to Stereo or else you can choose Surround for 6 audio channels. Set the audio sample rate to the television rate of 48kHz. Set the render format to the same format as your video clips. Final Cut Pro X defaults to using ProRes compression but you can switch this to Uncompressed 10-bit 4:2:2 for an uncompressed workflow. Click OK to complete the creation of your new project.

Step 7. Go to the Final Cut Pro menu, choose Preferences and then click the Playback tab. Ensure the A/V Output menu has selected "Blackmagic" and the same video standard as your project and then close the Preferences.

Step 8. Go to the Window menu and select A/V Output to enable video output via your Blackmagic video hardware.

If you also wish to monitor audio via your Blackmagic video hardware, open the System Preferences, click the Sound icon, click the Output tab and then select "Blackmagic Audio" for the sound output.



Step 3. In the Export Movie window, leave Export on "Current Settings" and also set Include to "Video and Audio".

Playback

Step 1. Import some clips in to your new project.

Step 2. You can now use the Final Cut Pro X timeline on your computer monitor and view the video preview on the monitor or TV connected to the output of your Blackmagic Design video hardware.

Capturing Video and Audio

You can use Blackmagic Media Express to capture video and audio with your Blackmagic Design video hardware. Once you have captured the clips, you can import them in to Final Cut Pro X for editing.

When capturing clips with Media Express, make sure you choose one of the video formats which is also supported by Final Cut Pro X, i.e.: Apple ProRes 4444, Apple ProRes 422 (HQ), Apple ProRes 422 or Uncompressed 10-bit 4:2:2.

Editing to Tape

Once you have completed a project in Final Cut Pro X, you can render the project to a movie file and then use Blackmagic Media Express to master the movie to tape with your Blackmagic Design video hardware.

Step 1. Select your clips from the timeline in Final Cut Pro X.

Step 2. Go to the Share menu and choose Export Movie.

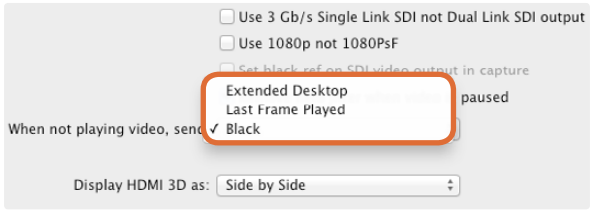
Step 3. In the Export Movie window, leave Export on "Current Settings" and also set Include to "Video and Audio". Click "Next".

Step 4. Open Media Express and import the clip that was exported from Final Cut Pro X.

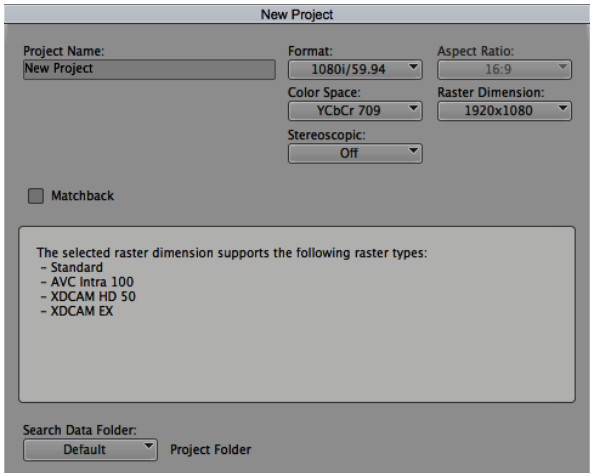
Step 5. Refer to the Blackmagic Media Express section of this manual for "Editing video and audio files to tape".

Media
Composer®
Media Composer 7.0.0
(C)2013 Avid Technology, Inc. All rights reserved.
Use of this software is subject to a related license agreement.
License Type: Software (Node Locked)
Computer Name: mountainocta

Avid Media Composer



If using a single computer monitor with Media Composer, open the Blackmagic Design system preferences and choose to send Black when not playing video.



Step 5. Type a project name and set the project options.

Avid Media Composer 7

Avid Media Composer captures and plays back standard definition and high definition video and audio with Blackmagic video hardware, and also supports RS-422 deck control. Blackmagic plug-ins for Media Composer are automatically installed if Media Composer is installed before the Desktop Video software.

You can use the Blackmagic Design system preferences to select your video and audio connections including SDI, analog and HDMI, as well as other settings such as up, down and cross conversion, reference clocking and HD progressive frame type. If only using a single computer monitor with Media Composer, disable the Extended Desktop feature by setting "When not playing video, send" to "Black" and then restart the computer. This will avoid the software interface extending on to your video monitor.

Setting up

Step 1. Launch Media Composer and the Select Project dialog box will appear.

Step 2. Choose your preferred User Profile if you have previously created one.

Step 3. Select the folder in which you want to create the project: Private, Shared or External.

Step 4. Click the New Project button.

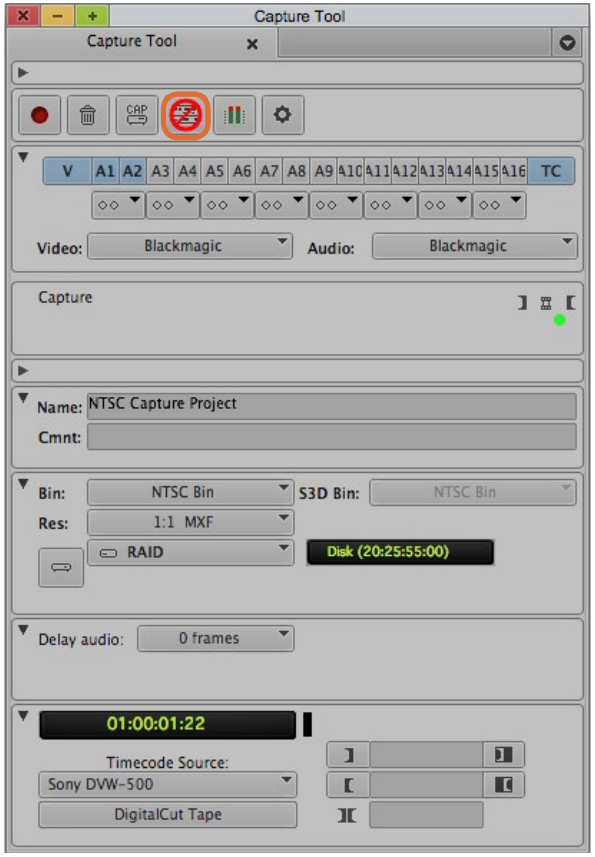
Step 5. Type a project name and set the project options including Format, Color Space and Stereoscopic. Click OK. Once the project has been created, the frame rate and raster cannot be changed. The color space and stereoscopic settings can be changed later in the Format tab of the project.

Step 6. Double-click the project name in the Select Project dialog box. The Media Composer interface will appear along with the project window for your new project. You have completed setting up your project.

Playback

As a quick test to make sure everything is connected correctly, go to the Media Composer Editing Guide and follow the section entitled "Importing Color Bars and Other Test Patterns". Double-click the imported file to play it in a pop-up monitor. You should now see the image on both your computer monitor and your Blackmagic output.

If you can't see any video on your Blackmagic output, check the connections again and ensure you have the correct output settings configured within the Blackmagic Design system preferences by choosing Tools > Hardware Setup from within Media Composer.



Step 2. Set up the Capture Tool to capture video without deck control by clicking the Toggle Source button.

Capture from Non-Controllable devices

Many video sources including all kinds of modern cameras and disk recorders, as well as old cameras and VHS tape players, do not have any device control. To capture video without deck control:

Step 1. Choose Tools > Capture to open the Capture Tool.

Step 2. Click the Toggle Source button so that the button's icon of a deck shows a red circle-slash symbol. This symbol indicates that deck control has been disabled.

Step 3. Set the Video and Audio input menus to "Blackmagic".

Step 4. Select the video source track (V) and the audio source tracks (A1, A2, ...) you wish to capture.

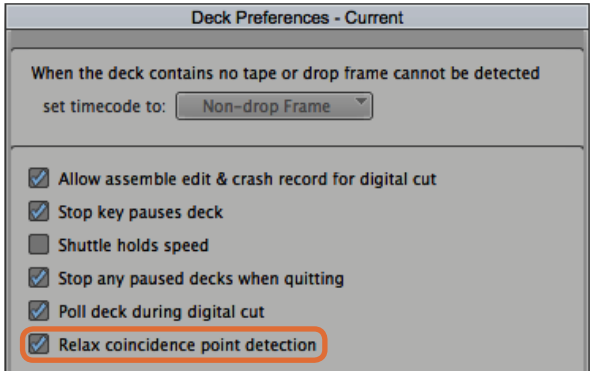
Step 5. Use the Bin menu to select a Target Bin from the list of open bins.

Step 6. From the Res (resolution) menu, choose which compressed or uncompressed codec you wish to use for your captured clips. For maximum quality uncompressed video, choose "1:1" for 8-bit video capture or "1:1 10b" for 10-bit video capture.

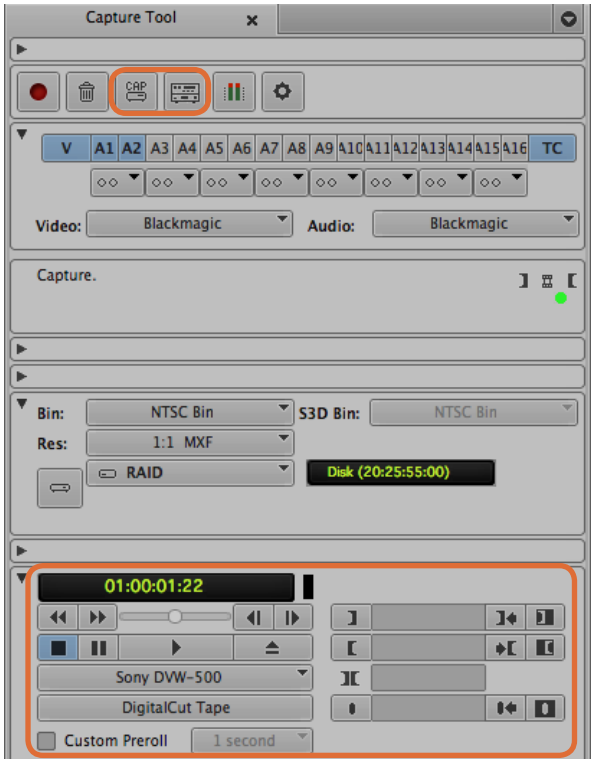
Step 7. Select the disk storage for your captured video and audio. Use the Single/Dual Drive Mode button to determine if video and audio will be stored together on a single drive or video on one drive and audio on another drive. Select the target drive(s) for your captured media from the Target Drives menu(s).

Step 8. Click the "Tape Name?" button at the bottom of the window to open the Select Tape dialog box. Select the desired tape, or add a new one, and then click OK.

Step 9. Ensure your video and audio source is ready or playing and then click the Capture button or press the F4 key. The Capture button will flash red while recording. Click the Capture button again or press the Escape button on your keyboard to end the capture.


Deck Preferences - Current
When the deck contains no tape or drop frame cannot be detected
set timecode to:
Non-drop Frame
Allow assemble edit & crash record for digital cut
Stop key pauses deck
Shuttle holds speed
Stop any paused decks when quitting
Poll deck during digital cut
Relax coincidence point detection

Step 6. In the Deck Preferences, enable the option to "Relax coincidence point detection".



Set the CAP and Toggle Source buttons to use deck control. Use the Deck Controller Window to cue the tape and start playing.

Capture from Controllable devices with UltraStudio and DeckLink

If you have a deck which connects via RS-422, you will need to configure the deck settings before performing a capture with deck control:

Step 1. From your project window, click the Settings tab and double-click on Deck Configuration.

Step 2. In the Deck Configuration dialog box, click Add Channel and then set the Channel Type to Direct and the Port to RS-422 Deck Control. Click OK and choose "No" when asked, "Do you want to autoconfigure the channel now?"

Step 3. Click Add Deck and then select your brand and model of deck from the Device menus and also set the desired preroll. Click OK and then Apply.

Step 4. Under the Settings tab, double-click on Deck Preferences.

Step 5. If you plan to make assemble edits to tape, enable the option to "Allow assemble edit & crash record for digital cut". If this option is left unchecked, you will only be able to perform insert edits.

Step 6. Enable the option to "Relax coincidence point detection" and set other settings as needed. Click OK. You have completed setting up the RS-422 connection to your deck.

To test the RS-422 connection, ensure an RS-422 serial cable is connected between your Blackmagic video hardware and the deck. The Remote/Local switch must be set to Remote on the deck so you can use the transport controls in Media Composer. Open the Capture Tool and use the standard j, k, l shortcut keys to shuttle backwards, pause and shuttle forwards on the deck. If a deck name appears in italics in the Deck Selection menu, or "NO DECK" is displayed, click the menu and select Check Decks one or more times, until the deck is listed without italics, to reestablish deck control.

To capture with deck control on-the-fly:

Step 1. Choose Tools > Capture to open the Capture Tool.

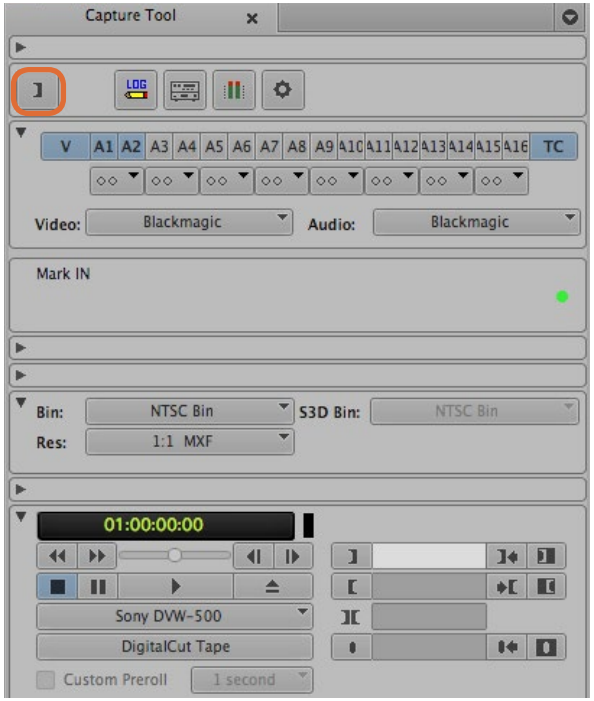
Step 2. The Capture/Log Mode button should show the CAP icon. If this button displays a LOG icon, click the button to switch to capture mode and the CAP icon should appear.

Step 3. The Toggle Source button should show the icon of a deck. If a red circle-slash symbol is present, click the button to enable deck control and make the red symbol disappear.

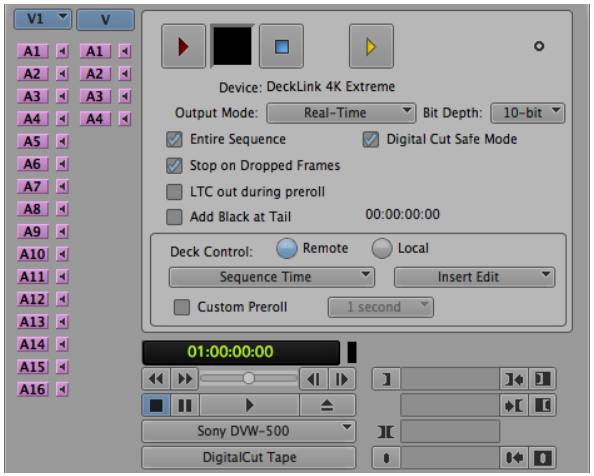
Step 4. Configure video and audio input, video and audio source tracks, target bin, res, target drive and tape name the same way as in "Capture from non-controllable devices".

Step 5. Use the Deck Controller Window in the Capture Tool to cue the tape and start playing.

Step 6. Click the Capture button or press the F4 key. The Capture button will flash red while recording. Click the Capture button again or press the Escape button on your keyboard to end the capture.



Step 5. Click on the Mark IN/OUT button or use the "i" and "o" keys on the keyboard to mark in and out points.



The Digital Cut Tool is used for recording to tape.

Batch Capture with UltraStudio and DeckLink

To log clips for batch capture:

Step 1. Choose Tools > Capture to open the Capture Tool.

Step 2. Click on the Capture/Log Mode button so it displays the LOG icon.

Step 3. Configure video and audio input, video and audio source tracks, target bin, res, target drive and tape name the same way as in "Capture from non-controllable devices".

Step 4. Use the Deck Controller Window, or use the standard j, k, l shortcut keys, to shuttle backwards, pause and shuttle forwards on the deck and locate the video you want to capture.

Step 5. Click the Mark IN/OUT button, to the left of the LOG button. The icon will alternate between IN and OUT so you only have to click the one button to mark all your in and out points. This can be more convenient that using the separate Mark IN and Mark OUT buttons in the Deck Controller Window. Alternatively use the "i" and "o" keys on the keyboard to mark in and out points.

Step 6. When you have finished logging in and out points, open the logging bin, select the clips you want to capture.

Step 7. Choose Clip > Batch Capture, select the desired options in the resulting dialog box and click OK.

Recording to Tape with UltraStudio and DeckLink

Once you have captured your clips, dragged them in to the timeline, edited them and applied and rendered any effects, you will want to record the completed project to tape.

Step 1. Double-click on a sequence, in your project bin, to open it into the Timeline window.

Step 2. Choose Output > Digital Cut to open the Digital Cut Tool.

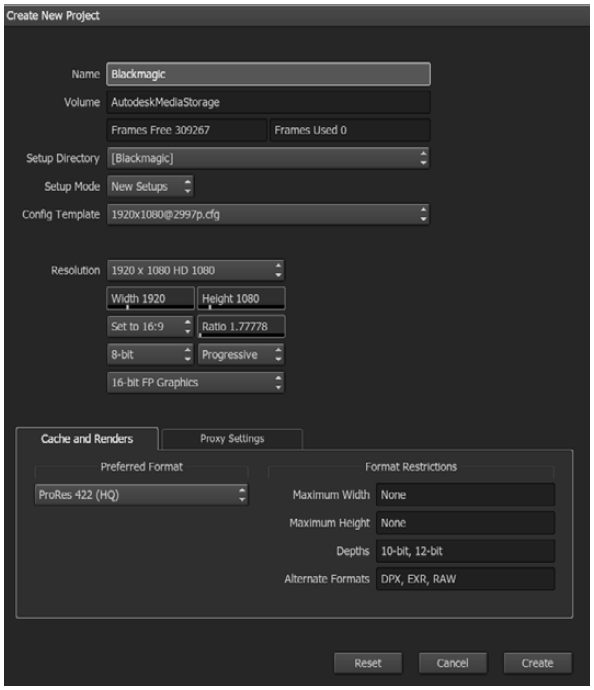
Step 3. Set Output Mode to Real-Time, Bit Depth to 10-bit, and Deck Control to Remote.

Step 4. From the Edit Menu, choose to Insert Edit or Assemble Edit for precise edits onto a timecode striped tape. Alternatively choose Crash Record for an easy way to record. If Insert Edit is the only option, go to the Settings tab in your project, double-click on Deck Preferences and enable "Allow assemble edit & crash record for digital cut".

Step 5. If a deck name appears in italics in the Deck Selection menu, or "NO DECK" is displayed, click the menu and select Check Decks one or more times, until the deck is listed without italics, to reestablish deck control.

Step 6. Press the Play Digital Cut button (red triangle icon) to record your sequence to tape.

Autodesk Smoke



Type a project name and set the project options.

Autodesk Smoke

Autodesk Smoke is a powerful all in one software solution that brings together editing, compositing and 3D effects into one workspace. Autodesk Smoke captures and plays back standard definition and high definition video and audio with Blackmagic video hardware, and also supports RS-422 deck control. Before installing Autodesk Smoke, make sure that both the Blackmagic Design drivers and your video device are properly installed. You will need either a standalone or a network licence to be able to install Smoke on your system.

If you want to use Smoke to play back video on an external video monitor or TV, you can use the broadcast monitoring feature to output your video through Blackmagic video hardware.

Installation

Step 1. Launch Smoke and the Project and User Settings window will appear. Choose your Project and User if you have previously created them. Otherwise, create a new project and/or user.

Step 2. Now set the project settings to match your delivery settings, i.e., 1080HD. Most of these settings, such as the frame rate and resolution, can be changed later during your session.

Step 3. Choose your intermediate format, such as ProRes 422 or even Uncompressed for your project generated media. Remember to choose a format that your storage can candle.

Step 4. Click on the Proxy Settings tab and choose whether you want to create proxies of all your media, which creates a low resolution version of each clip, allowing you to work quickly. This setting is off by default as it will eat up a lot of disk space.

Step 5. Click the Create button.

Setting Up Your Hardware

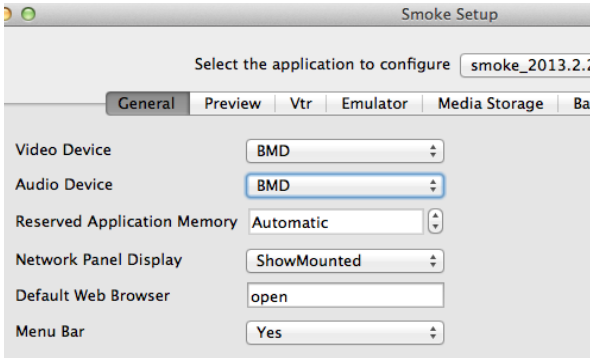
It's a good idea to check the following when you are preparing for a VTR session:

Step 1. Connect the outputs of your VTR to the inputs of your Blackmagic Design capture and playback device. Connect the outputs of your Blackmagic Design capture and playback device to the inputs of your VTR.

Step 2. Connect an RS-422 deck control cable from the serial port on your VTR to the remote control port of your Blackmagic Design capture and playback device.

Step 3. Set your VTR to remote.

Step 4. Connect a sync generator to the sync input of the VTR to ensure frame-accurate capture. If you have a separate audio device, an audio sync signal must be connected to it as well.



Select the Blackmagic Design capture and playback device in the Smoke Setup utility

Active	Protocol	Name	Input Format	Timing
☑	sony	HD D5 1080 60i	SERIAL1	1920x1080_60i
☑	sony	HD D5 720 59.94p	SERIAL1	1280x720_5994P
☑	sony	HD D5 720 60p	SERIAL1	1280x720_60P
☑	sony	HD D5 24sf	SERIAL1	1920x1080_24SF
☑	sony	HD D5 24p	SERIAL1	1920x1080_24P
☑	sony	HD D5 2398sf	SERIAL1	1920x1080_2398SF
☑	sony	HD D5 2398p	SERIAL1	1920x1080_2398P
☐	sony	HD D5 25p	SERIAL1	1920x1080_25P

Select timing settings for your VTR using the VTR tab in the Smoke Setup utility

Video and audio tracks turn red when enabled for capture from your VTR.

Setting up Autodesk Smoke to recognize your VTR

Before starting Autodesk Smoke, you must use a utility called Smoke Setup to select the model of the VTR(s) in your facility and its appropriate timing settings.

Step 1. Go to Applications>Autodesk>Smoke>Utilities and open Smoke Setup.

Step 2. In the General tab, make sure that Video Device and Audio Device are set to your VTR model.

Step 3. In the VTR tab, enable the VTR model and the timings you want to use with Autodesk Smoke. Enable the rows with live NTSC or live PAL to enable crash-record or live output.

Step 4. Click Apply and close Smoke Setup.

Capture from Controllable devices with UltraStudio and DeckLink

Autodesk Smoke can be configured to capture from controllable VTRs with RS-422 deck control.

Step 1. Select a folder in the Media Library where you want the captured clip to be created.

Step 2. Select File>Capture from VTR. The VTR Capture module appears.

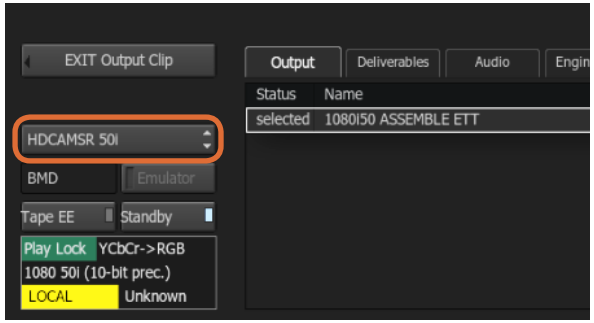
Step 3. Cue the tape to the start frame of the clip you want to capture.

Step 4. Select the video and audio channels you wish to record. The buttons will turn red to let you know which tracks are enabled.

Step 5. Enter In and Out points in the In and Out fields.

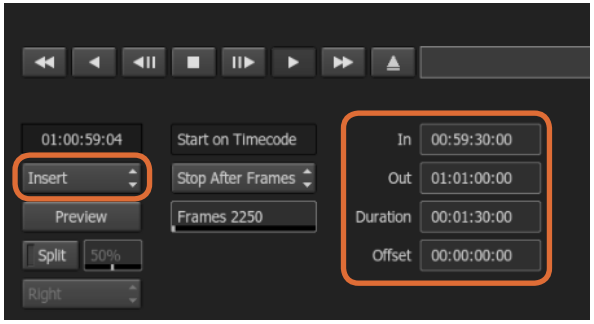
Step 6. Click Capture to start the capture. The timecode field will turn green to indicate that capture is in progress.

Step 7. End the capture at any time by clicking anywhere over the Preview window. The clip will automatically be saved to the location that you selected before entering the VTR Input module.



Step 3. Your VTR should be selectable in the drop down list.

Clips you have selected to output appear in a list with their current status.



Set your In and Out points, then select Insert from the Output dropdown menu.

Recording to Tape with UltraStudio and DeckLink

Load a clip into the VTR Output module and set the In and Out points for the output clip. If needed, you can also enable the options to offset the start frame for output and to apply a letterbox overlay.

Step 1. Select File>Output to VTR.

Step 2. Choose the clip(s) to output from the Media Library. You can also select a folder if you wish to output its contents in one session. The VTR Output module appears.

Step 3. Select the VTR in the Device Name box. The preview window displays the video from the tape in the selected VTR.

Step 4. Make sure that the correct video track and audio channel buttons are enabled so that the corresponding video track and audio channels are output to tape.

Step 5. Enable or disable All Audio in the Clip Output menu. When All Audio is enabled, every audio channel will be converted to the format on your tape, not just the ones you enabled.

Step 6. Click preview to watch the clip before outputting.

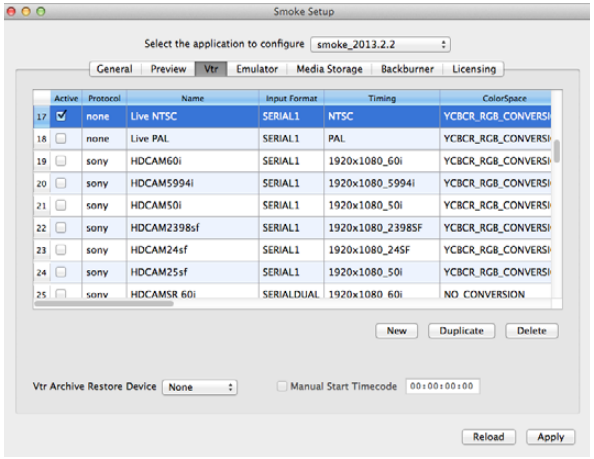
Step 7. To output the selected clip starting at any frame other than the first one, enter the start timecode in the Start Offset field.

Step 8. Set the In and Out points for clip output.

Step 9. To output the clip to the VTR, select Insert from the Output box. The clips with Status selected will be output to tape. During output, the status of each clip will be updated to Pending, Output, and then Done.

Step 10. Cue to the In timecode and then select Play to check that the transfer was successful.

Step 11. When you are finished, click EXIT Output Clip to close the module.



Enable the rows with live NTSC or live PAL to enable crash-record or live output.

Crash-Record and Live Output

Autodesk Smoke allows you to capture a live video signal or crash-record a clip by using a tablet pen or a mouse to start and stop the clip input or output process. When you choose this form of capture, Autodesk Smoke checks the available space on your Autodesk Media Storage device to determine the available space, which varies depending on your preferred intermediate format.

Also, if you are using a device that does not support remote control via RS-422, such as a camera, VCR, or any other device, use the Live NTSC or PAL option to capture, and the Live Video option to output clips.

To crash-record a live video signal:

Step 1. Choose a folder from the Media Library where you would like the captured clip to be created.

Step 2. Select File>Capture from VTR. The VTR Capture module appears.

Step 3. From the VTR Device box, select Live NTSC or Live PAL. The incoming live video signal appears in the preview window.

Step 4. Select the Start On Pen mode. End the capture by using Stop On Pen or Stop On Frames. Traditionally, Autodesk Smoke was operated with a tablet and pen, hence the Start On Pen terminology.

When Stop On Pen is selected for capture stop mode, the out point and the duration timecode fields will be updated to show the longest possible clip that can be recorded on your Autodesk Media Storage device. The capture will either end when you click anywhere on the screen or when your storage fills up.

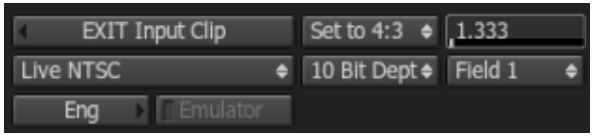
Step 5. Enter the clip name and enable the video tracks and audio channels that you want to capture.

Step 6. Make sure you are receiving the live video signal.

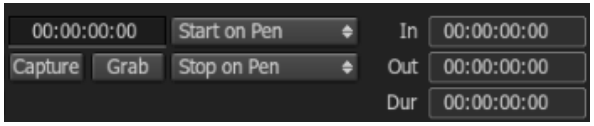
Step 7. Press Play on the video device.

Step 8. Select Process to begin capturing.

Step 9. Click anywhere on the screen to end capturing in Stop On Pen mode.



Select Live PAL or Live NTSC when outputting a live video signal.



Use Start On Pen mode when outputting live video.

To output a live video signal:

Step 1. Select File>Output to VTR.

Step 2. Select the clip(s) to output from the Media Library. You can also select a folder to output its contents. The VTR Output module appears.

Step 3. From the VTR Device box, select Live NTSC or Live PAL.

The Start Mode box is unavailable. With Live Video output, you must use Start On Pen mode. You can use Stop On Pen or Stop On Frames to end the output.

Step 4. Set output options. For example, enter the clip name and enable the video tracks and audio channels that you want to capture.

Step 5. On the device receiving the signal, start the recording, or take any action required to enable the reception of the signal from Autodesk Smoke.

Step 6. Select Process to begin the output on Autodesk Smoke.

Step 7. Click anywhere on the screen to end the output in Stop On Pen mode.

What is Media Express?

Blackmagic Media Express software is included with every UltraStudio, DeckLink and Intensity as well as every ATEM Switcher, Blackmagic Camera, H.264 Pro Recorder, Teranex Processor and Universal Videohub. Depending on your hardware model and platform, Media Express 3 lets you batch capture and play back 2D and dual stream stereoscopic 3D in DPX, ProRes, uncompressed YUV and RGB, DVCPRO 50, DVCPRO HD and MJPEG files.

Media Express 3 also supports CMX EDL import, frame accurate deck control via RS-422, and will even insert and assemble to tape! Media Express is fast, accurate, easy to use and works on Mac OS X, Windows and Linux. You can even grab still frames directly from your deck and save them as perfect digital quality still images.

Media Express 3 is a great tool when you don't need the complexity of NLE software but simply want to capture, play back and output clips to tape, especially when working with video compositing software.

The User Interface

Media Express can easily be scaled for different sizes of monitors or even small notebook screens. When you open Media Express, you'll notice the log and capture, playback and edit to tape views are color-coded so you will know at a glance which mode is being used.

Media List

The left "media list" always displays the scratch, any bins you have created and also any media you have imported, captured or logged for capture. Media can be displayed in Timecode List view or Thumbnail view and you can even filter media by favorites. The Search field makes it easy to find media by name or by attributes captured in the media metadata. The project name and format are shown in the bottom-left corner of the Media Express window.

The top-right pane always displays the video preview. Timecode is displayed at the top of the video preview pane and NO REMOTE will be indicated if no RS-422 device control is connected.

Log and Capture

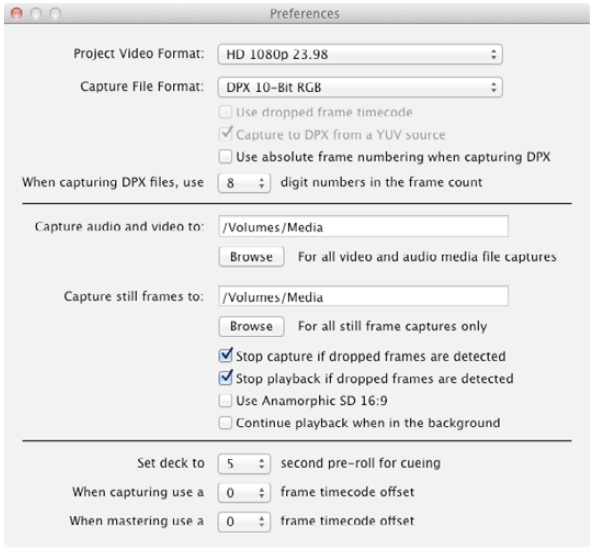
Click on the red Log and Capture tab. The video preview pane shows the source video from your camera or deck. Here you can enter metadata for the clips you will capture including name, description, reel number, favorite and more. You can capture with or without device control, log clips with in and out points, and batch capture. Double-clicking a captured clip in the media list will automatically switch Media Express to Playback view.

Playback

In the green Playback view, the video preview pane shows the video of the clip being played. Click the favorites button to add to your favorites in the media list.

Edit to Tape

After clicking the blue Edit to Tape tab, select clips from the media list to be mastered to tape using RS-422 device control. Set the In/Out points for your edit and choose between Assemble or Insert edit. You can even preview before mastering to tape. The video preview pane shows the clips being sent to tape.



Capturing Video and Audio files

Setting Up a Project

Before capturing any clips in Media Express, you will need to select the settings for your project.

Step 1. Go to Media Express>Preferences or Edit>Preferences on Windows or Linux. The project formats listed will vary depending upon whether your Blackmagic video hardware supports features such as Ultra HD 4K video or stereoscopic 3D video.

Step 2. Select from a range of professional compressed and uncompressed capture file formats or even a DPX image sequence in the Capture File Format drop down menu. Video will be captured in the chosen format and saved to a QuickTime movie.

Step 3. Set the storage location for your captured video and audio.

Step 4. Choose whether to stop capture or playback if dropped frames are detected.

Standard definition projects are set to the 4:3 aspect ratio unless you enable the Anamorphic SD 16:9 checkbox.

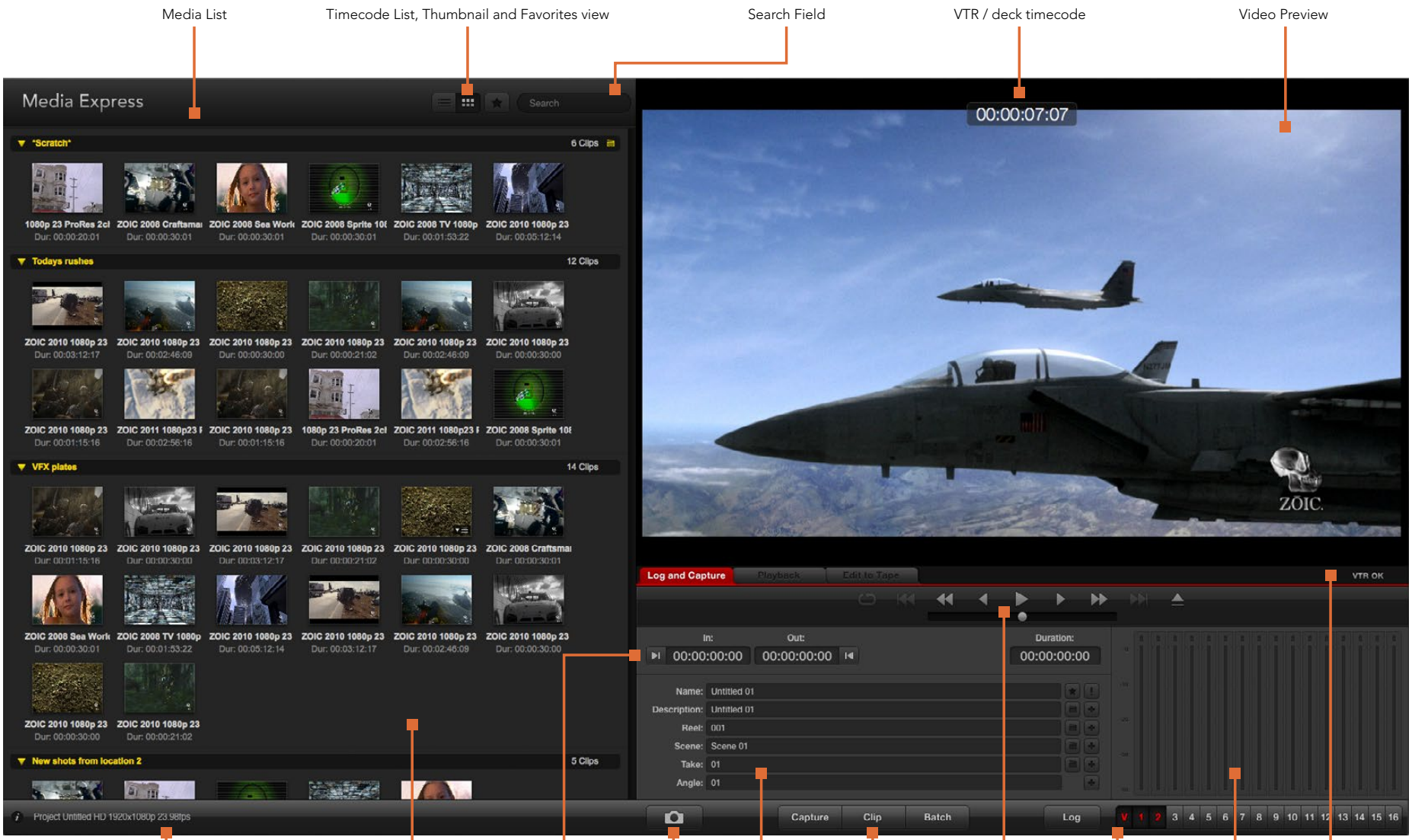
Usually video applications stop playing video if you send them to the background. If you want Media Express to keep playing video, even if you open another application in the foreground, enable the checkbox to "Continue playback when in the background".

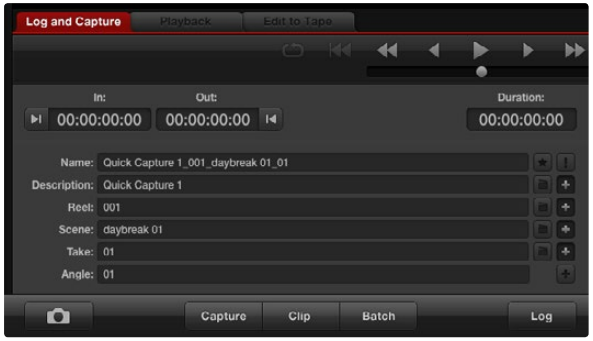
The final options relate to tape decks with RS-422 deck control.

Your tape deck requires a pre-roll of a few seconds before performing an edit so the tape speed is stable by the time it is used for an edit.

Timecode offsets can also be set to calibrate the timecode to the video.

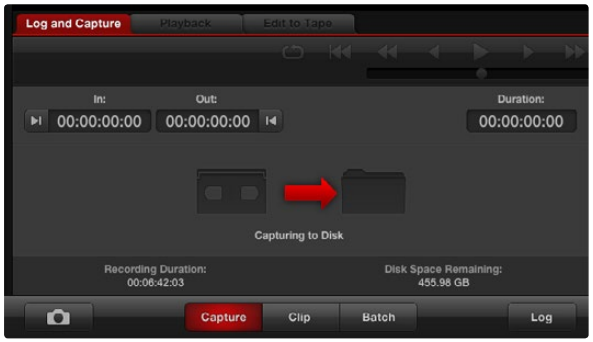
Blackmagic Media Express





Enter a description for your video

Set the desired number of audio channels to be captured



Click the "Capture" button to commence recording

Capture

Capturing video is easy and all you need to do is connect a video source, set the Media Express preferences and press the Capture button.

Step 1. Start by connecting your video source to an input of your Blackmagic video hardware and check that the Blackmagic system preferences are set to the same video input, e.g. SDI, HDMI or analog.

Step 2. Open Media Express and set its preferences to the project video format and capture file format. The project video format must be set correctly otherwise you will not see your video in the preview pane.

Step 3. Click the red Log and Capture tab and enter a description for your video into the Description field of the logging information area.

Step 4. Click the "+" button next to the Description to add it to the automatic Name field. Click the "+" button next to any of the other fields that you wish to add to the Name field.

- You can increment the value in each of these fields by clicking on the corresponding clapper board icon. Alternatively you can type directly into any field to customize its name and number.
- The text in the automatic Name field will be applied to the clip(s) which are about to be captured.
- Click the "star" icon next to the Name field if you want to log the clip as a favorite.
- Click the "!" icon next to the Name field if you wish a clip name confirmation prompt to appear before every capture. This will provide you with the chance to change the clip name.

Step 5. Set the desired number of audio channels to be captured.

Step 6. Click the "Capture" button to start recording. To end capture, click the "Capture" button again to automatically keep the clip. Alternatively, press esc if you want to be prompted to delete or save the clip. The captured clips will be added to the Media List.

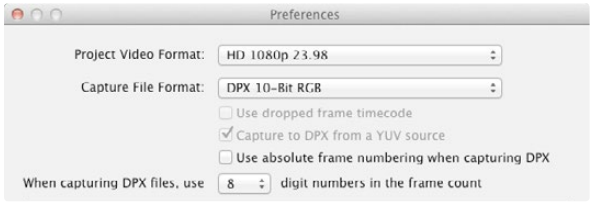
Logging clips

Ensure an RS-422 serial cable is connected between your Blackmagic video hardware and the deck. The Remote/Local switch must be set to Remote on the deck so you can use the transport controls in Media Express. Use the standard j, k, l shortcut keys to shuttle backwards, pause and shuttle forwards on the deck.

Click the Mark In button to mark the In point, or use the shortcut key `i`.

Click the Mark Out button to mark the Out point, or use the shortcut key `o`.

Click the Log Clip button to log the clip, or use the shortcut key `p`. The entry should now appear in the Media List with a red X in its icon to indicate the media is offline.



DPX capture preferences

Batch Capture

After logging a clip, you can click the Clip button if you just want to capture a single clip.

If you want to capture multiple clips, continue logging all the clips that you wish to batch capture.

When logging is completed, select the logged clips in the Media List and:

- click the Batch button, or
- right-click on the selection and select 'Batch Capture', or
- go to the File menu and choose Batch Capture.

Media Express will cue the tape and precisely capture the clip from the In to the Out timecode points, including any handles specified in the Media Express preferences.

DPX Capture

If you want to capture a DPX image sequence rather than a movie file, open the Media Express preferences and set the Capture File Format to DPX 10-Bit RGB. You will need a fast disk array to cope with the uncompressed, 10-bit RGB format.

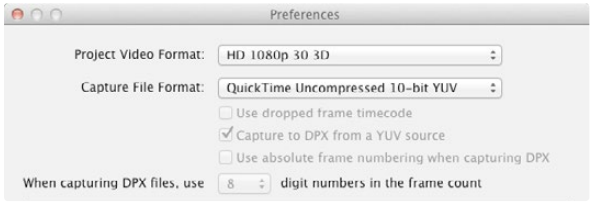
- Create a DPX project by setting the capture file format to DPX.
- Capture.

When the capture has been completed, a single thumbnail will appear in the Media List representing the entire frame sequence. The sequence of DPX frames will be stored in its own folder in your disk storage. Audio will be stored in a .wav file in the same folder.

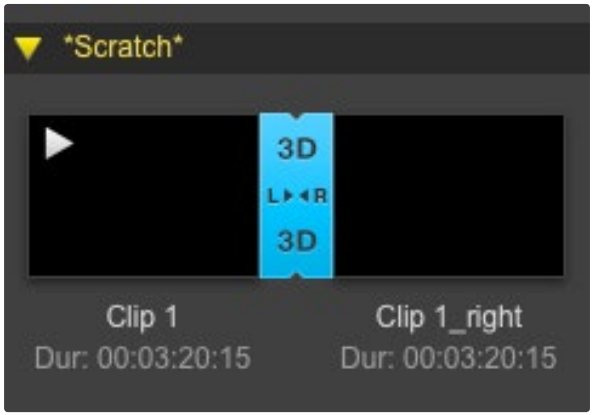
By default, DPX captures are assumed to be from YUV sources. If you need to capture from an RGB source, disable the "Capture to DPX from a YUV source" option otherwise your DPX files will show weird pink and green colors.

If you want the DPX frame numbers to be based on the timecode of the captured video, rather than just starting from zero, enable the option to "Use absolute frame numbering when capturing DPX".

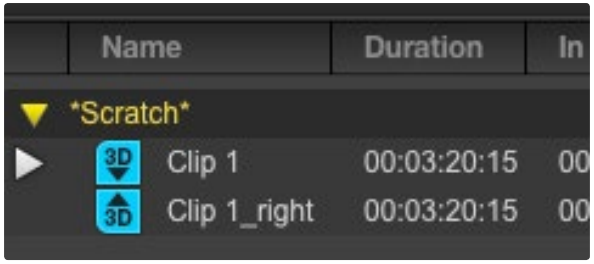
If you aren't performing long DPX captures, you may wish to reduce the number of zeroes in the frame numbers by changing the option, "When capturing DPX files, use (2-8) digit numbers in the frame count.


Preferences
Project Video Format:
HD 1080p 30 3D
Capture File Format:
QuickTime Uncompressed 10-bit YUV
Use dropped frame timecode
Capture to DPX from a YUV source
Use absolute frame numbering when capturing DPX
When capturing DPX files, use
8
digit numbers in the frame count

Select a project video format with "3D" in its name to capture dual-stream stereoscopic 3D video clips



In Thumbnail view, the left and right eye clips are connected by a 3D indicator and presented as a single, large icon.



In Timecode List view, the left and right eye clips are listed on two lines and linked together by a 3D indicator.

3D Capture

When Media Express is used with a Blackmagic video hardware model that supports dual-stream 3D, you can create left and right eye 3D video clips by capturing 2 streams of HD-SDI video simultaneously.

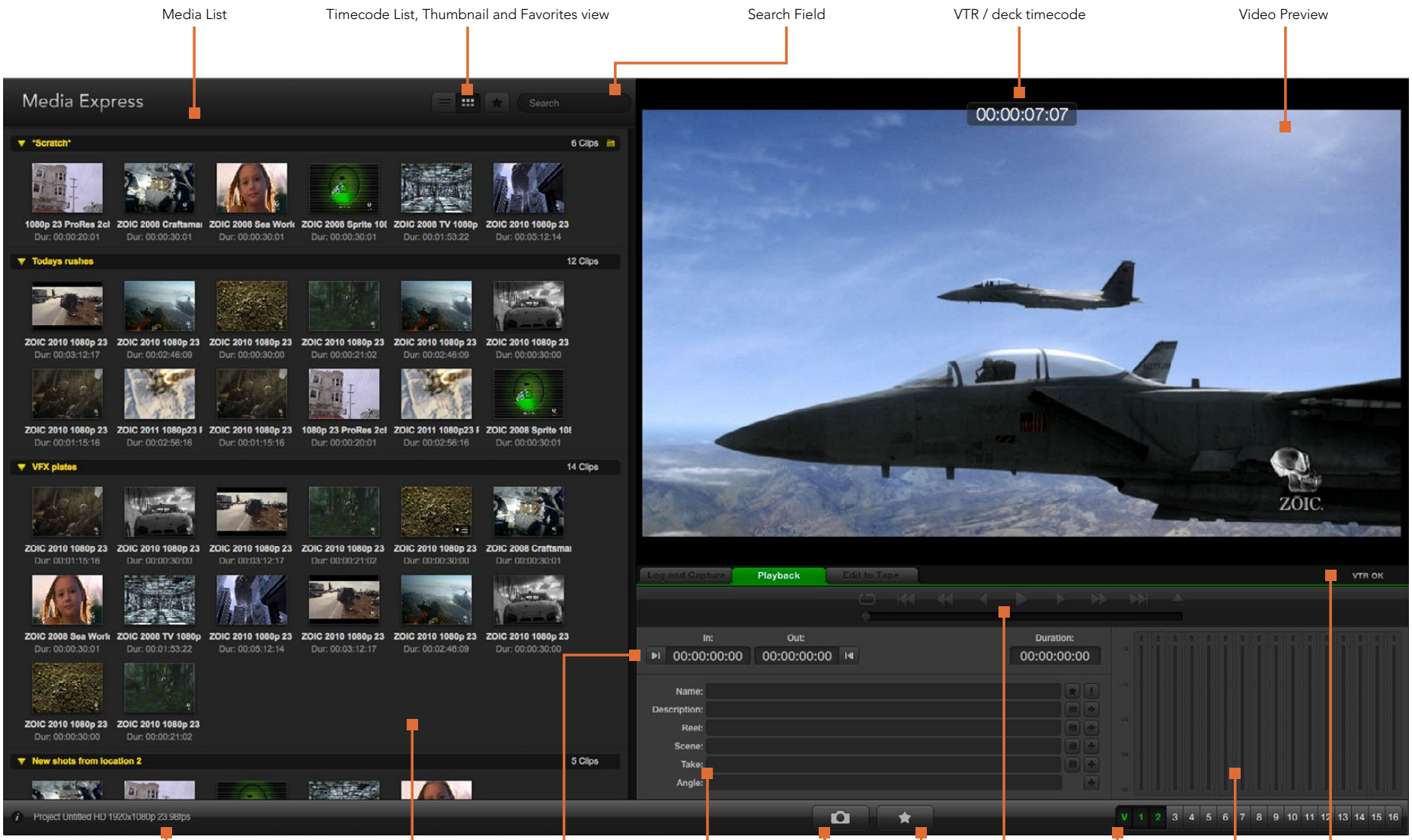
- Create a 3D project which matches the frame rate of your dual stream 3D video source.
- Ensure you have 2 discrete HD-SDI video inputs to the Blackmagic video hardware.
- Capture.

When capturing and logging dual stream 3D in Media Express, the clip name will be applied to the left eye video. The right eye video will be appended with '_right' text. For example, if you name the stereo clip "Clip 1", the left eye clip will be called "Clip 1.mov" and the right eye clip will be called "Clip 1_right.mov".

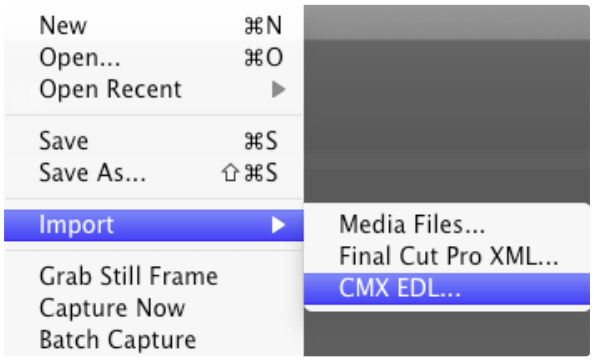
The Media List presents an eye-catching indication that the captured clip is a 3D clip:

- In Thumbnail view, the left and right eye clips are connected by a 3D indicator and presented as a single, large icon.
- In Timecode List view, the left and right eye clips are listed on two lines and linked together by a 3D indicator.

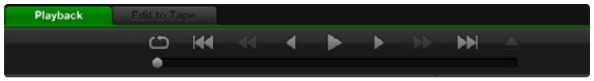
Blackmagic Media Express



Media Express
The video format of the selected clip does not match the project settings.
Would you like to save this project and start a new one based on the video format of the selected clip?
Save
Don't Save
Cancel



There are three ways to import clips in to Media Express



You can use the transport controls to play, stop, jump to the next or previous clip and loop playback of your clips.

Playing back Video and Audio Files

Importing clips

You can play back your video and audio files after importing media into Media Express in any of the following ways:

- Double-click an empty area of the Media List.
- Right-click an empty area of the Media List and select Import Clip from the contextual menu.
- Go to the File menu, select Import and then Media Files.

Select the video and audio clip(s) you wish to import from the Open Video Clip dialog box. The clips will appear in the Scratch area of the Media List. If you have created your own bins in the Media List, you can drag the clips into the desired bin.

If you want to import media directly to a bin, right-click within the desired bin and select Import Clip from the contextual menu.

If the files being imported do not match the frame rate and size of existing clips in the Media List, you will be prompted to create a new project and to save the current project.

Media Express also supports the import of multichannel audio-only files recorded at 48kHz in the uncompressed WAVE (.wav) and AIFF (.aif) formats.

Another way to import media is to use an XML file which has been exported from Final Cut Pro. Go to the File menu, select Import and then Final Cut Pro XML. Open the desired XML and all the bins and media from the Final Cut Pro project will appear in the Media List.

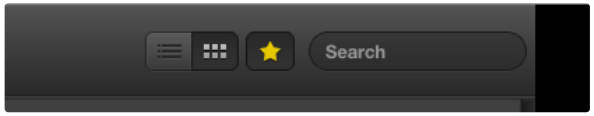
Media Express also supports the import of CMX EDL files to batch capture clips using EDL files from other video software. Go to the File menu, select Import and then CMX EDL. Select the EDL and open it. The logging information will appear in the Media List. Select the logged clips and perform a batch capture to import the clips from your deck.

Playing back single and multiple clips

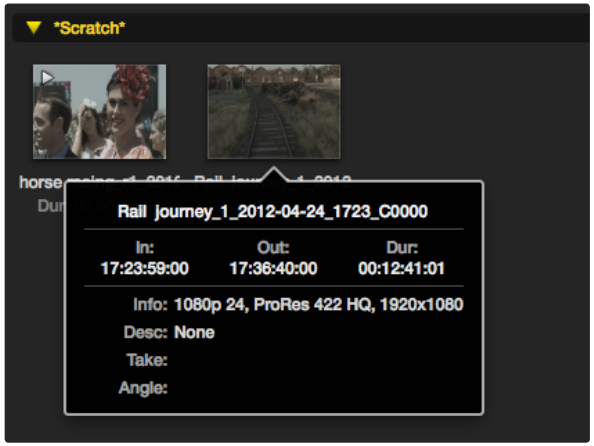
To play back a single clip, double-click the clip in the Media List. Alternatively select the clip in the Media List and press the space bar on your keyboard or the play button in the transport controls.

To play back multiple clips, select the clips in the Media List and then press the space bar on your keyboard or the play button in the transport controls.

Your video will play back in the video preview pane of Media Express and on all the video outputs of your Blackmagic video hardware. During playback, the audio channels being monitored can be switched on or off via the track enable/disable buttons.



In the Media List, choose to view your clips in Timecode List view or Thumbnail view. Click the Favorites button to only show your favorite clips. Type in the Search field to find your favorite clips.



Click the popup info icon on a thumbnail to view its info bubble.

Browsing Media

In the Media List, you can view your clips in Thumbnail view or Timecode List view by clicking on the desired view button at the top-right of the Media List.

Thumbnail view

Thumbnails are the most intuitive way to display your clips. To get information for a clip, hover your mouse over the clip's thumbnail and then click on the popup info icon which will appear at the bottom-right of the thumbnail. Click the info bubble to hide it.

List view

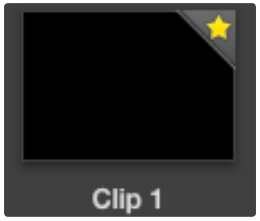
You can view your clips in Timecode List view by clicking on the Timecode List button at the top-right of the Media List. Use the horizontal scroll bar at the bottom of the Media List to view all the columns of information for your clips including: in and out points, video format, audio channels, field dominance and logging information.

Creating and using bins

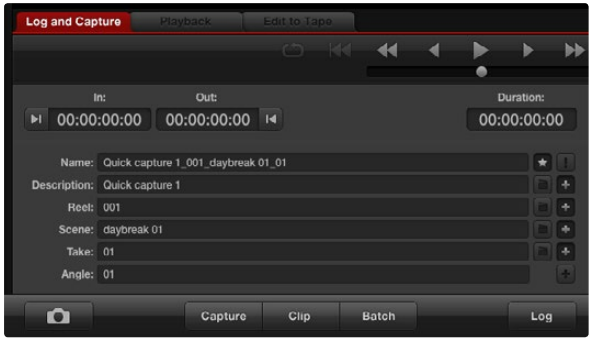
To create a bin for your clips, right click an empty spot in the Media List and select "Create Bin". Type in a name for the new bin.

You can move clips from the Scratch, or from one bin to another, by dragging the clip icons to the desired bin. If you want a clip to appear in more than one bin, import the same clip again by right-clicking on the bin and choosing "Import Clip".

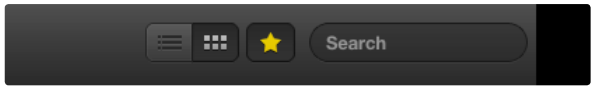
By default, logged clips appear in the Scratch. If you want to log clips and have them appear in a new bin, right-click the new bin and choose "Select As Log Bin".



Clips marked as favorites are easily identified by the yellow star in their icon.



In the Log and Capture tab, click the "star" icon next to the Name field if you want to log the clip as a favorite.



Click the Favorites button at the top of the Media List to only show your favorite clips. Type in the Search field to find clips.

Creating and using favorites

In the Log and Capture tab, click the "star" icon next to the Name field if you want to log a clip as a favorite.

In the Playback tab, clicking the "star" icon will make the clip a favorite if it is selected in the Media List. Click the "star" icon again to deselect it as a favorite.

Clips marked as favorites will show a yellow star in their icon in Timecode List view and Thumbnail view.

Once you have marked clips as favorites, click on the gray, Favorites, star button at the top of the Media list and it will turn yellow. All clips in your Media List will be hidden except for those marked as favorites. This is similar to creating a playlist and makes it easy to only play back your favorite clips and even master them to tape.

Linking an audio clip to a video clip

To link an audio clip to a video clip which appears in the Media List:

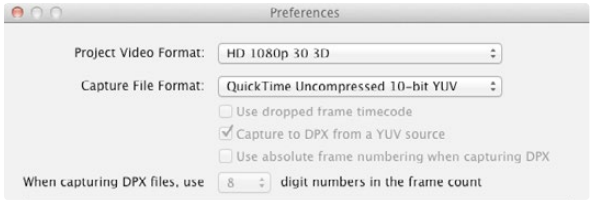
- select a video clip which contains no audio channels.
- right-click on the video clip and select 'Link Audio File' from the contextual menu.

The Media List presents a highly visible indication that the video and audio clips are linked. You can now play back the combined clip or master it to tape.

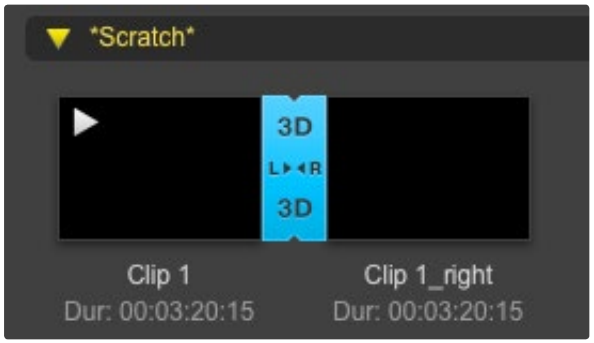
Deleting clips and bins

To delete clips, select the unwanted clips and press the forward delete button on your keyboard. This will only delete the clips from the Media List and they will safely remain on your disk storage.

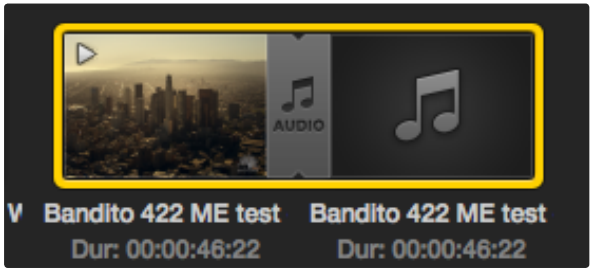
To delete bins, right-click within a bin and choose "Delete Bin". This action will delete the bin and any clips it contained. This will only delete the clips from the Media List and they will safely remain on your disk storage.


Preferences
Project Video Format:
HD 1080p 30 3D
Capture File Format:
QuickTime Uncompressed 10-bit YUV
Use dropped frame timecode
Capture to DPX from a YUV source
Use absolute frame numbering when capturing DPX
When capturing DPX files, use
8
digit numbers in the frame count

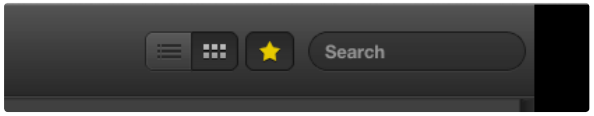
Select a 3D project video format



The Media List presents a highly visible indication that the imported clip is a 3D clip.



The Media List presents a highly visible indication that the video and audio clips are linked.



Type in the Search field to find clips.

Creating a 3D clip

To add a stereoscopic 3D clip to the Media List:

- select a 3D project video format that is the same frame rate as your 3D media
- import the 'left eye' file into the Media List
- right-click on the 'left eye' file and select 'Set Right Eye Clip' from the contextual menu. If the right eye clip was previously captured by Media Express, the right eye video will be appended with '_right' text. For example, if the left eye clip is named "Clip 1.mov", the right eye clip will be called "Clip 1_right.mov".

The Media List presents a highly visible indication that the imported clip is a 3D clip. The left and right eye clips will be displayed side by side in the Video Preview window to indicate you are working with a 3D video project.

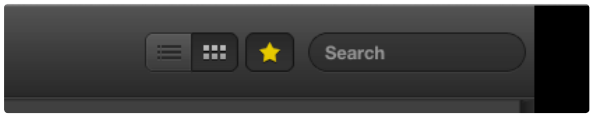
If you find the left and right eyes of a 3D stereo clip have been loaded the wrong way around:

- right-click the 3D clip in the Media List
- select 'Swap Eyes' from the contextual menu

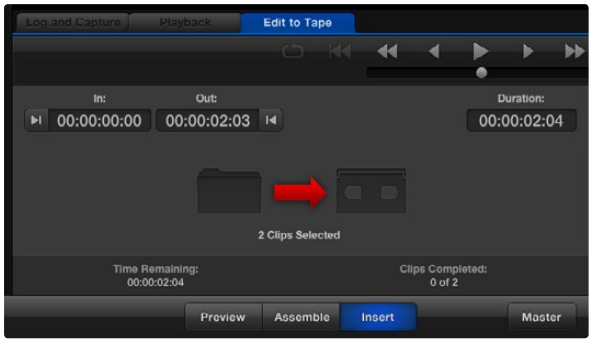
Searching the Media List

Clips can easily be found in a project by typing the name of your clips in the Search field at the top of the Media List. When used in conjunction with the favorites feature, the search will be confined to your favorite clips so you will see a shorter list of found clips.

Blackmagic Media Express



Click the favorite (star) icon at the top of the Media List to only show your favorites



This picture shows that 2 clips have been selected to be sent to tape

Set the desired number of audio channels to be mastered

Editing Video and Audio Files to Tape

Mastering your clips to a deck is easy. While we usually talk about mastering or editing to "tape", it doesn't matter if your deck uses tapes or disks. To master your clips:

- Select the clips you want to send to tape.
- Click the blue Edit to Tape tab.
- Set the In point and type of edit.
- Master to tape.

Selecting clips to master

From the Media List, select the clips you wish to master to tape. You can even insert multichannel audio-only clips to replace the master audio track on a master tape. If you only want to send your favorite clips to tape, click the favorite (star) icon at the top of the Media List to show your favorites and hide all other clips. Then select the favorite clips you wish to send to tape.

Insert and Assemble to tape

Click the blue Edit to Tape tab. If "No Remote" appears in the video preview pane, check that an RS-422 serial cable is connected between your Blackmagic video hardware and the deck. The Remote/Local switch needs to be set to Remote on the deck so you can use the transport controls in Media Express.

Enter the In point of the tape by entering timecode into the In point field, or by cueing the tape to the desired point via the transport control and then clicking the Mark In button, or use the shortcut key i.

If no Out point is entered, Media Express will set the duration of the edit to the total length of the clips in the Media List. If an out point is defined, Media Express will stop recording once the Out point timecode is reached, even if some clips have not been output.

The Assemble and Insert buttons are mutually exclusive and only one mode can be selected at a time. Choose to master to tape using Assemble or Insert edit. Then press the Master button.

The Preview and Master buttons are also mutually exclusive. Preview mode mimics the edit process but does not record to tape. This mode lets you check the edit point is correct. Preview edit operations should always be checked on monitors connected directly to the output of the deck. This lets you view the video already on tape and the new video.

If Record Inhibit is enabled either on the deck or on the tape, Media Express will display a dialog box, that Record Inhibit is enabled when you click the Master button. Check the deck and tape. Disable Record Inhibit before trying again.

Before mastering, the video and audio channels to be put to tape can be selected on or off via the track enable/disable buttons. Deselect the video channel if you only want to output audio to tape.

Blackmagic Disk Speed Test

What is Blackmagic Design Disk Speed Test?

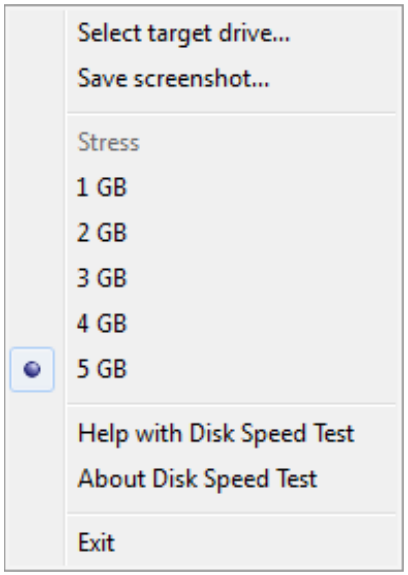
Blackmagic Disk Speed Test is a beautiful and fun to use application that measures the read and write performance of storage media in video frame sizes. The use of video frame sizes provides accurate measurement of how the disk storage will perform with video related applications.

If you have ever wondered whether your hard drive is suitable for playback (“read”) of a particular video format, you can use Disk Speed Test to find out. With its easy to understand layout, it is now simple to understand what performance you can get out of your media drives with a single click of the Start button! Disk Speed Test will even show you how many streams of video your storage is capable of handling!

Disk Speed Test is included free with any Blackmagic Design product installation on Mac OS X and Windows and can also be downloaded from our website free of charge.

Disk Speed Test takes the guess work out of configuring your storage system for optimal performance for any job you will be doing.

Disk Speed Test settings are accessed by clicking on the Settings button, just above the Start button. On Mac OS X, the same settings are also available from the Menu Bar at the top of your computer display.



Settings menu

Select Target Drive

Click Select Target Drive to choose the storage volume you wish to test. Ensure you have Read and Write permissions for the selected volume as Disk Speed Test will write a temporary file to it. This file will be automatically deleted when you quit Disk Speed Test.

Save Screenshot

After testing your disk storage, click Save Screenshot to save a screenshot of the results to a chosen location.

Stress

Lower stress settings may be chosen if you want to demonstrate the speed of disk storage quickly. The 1 GB option would be a good choice on a trade show booth to rapidly show the read and write performance of a disk array even though the results might not be quite as accurate as when the 5 GB option is selected.

Disk Speed Test limits each write operation to a maximum of 8 seconds and each read operation to a maximum of 8 seconds so you do not have to wait long to obtain results.

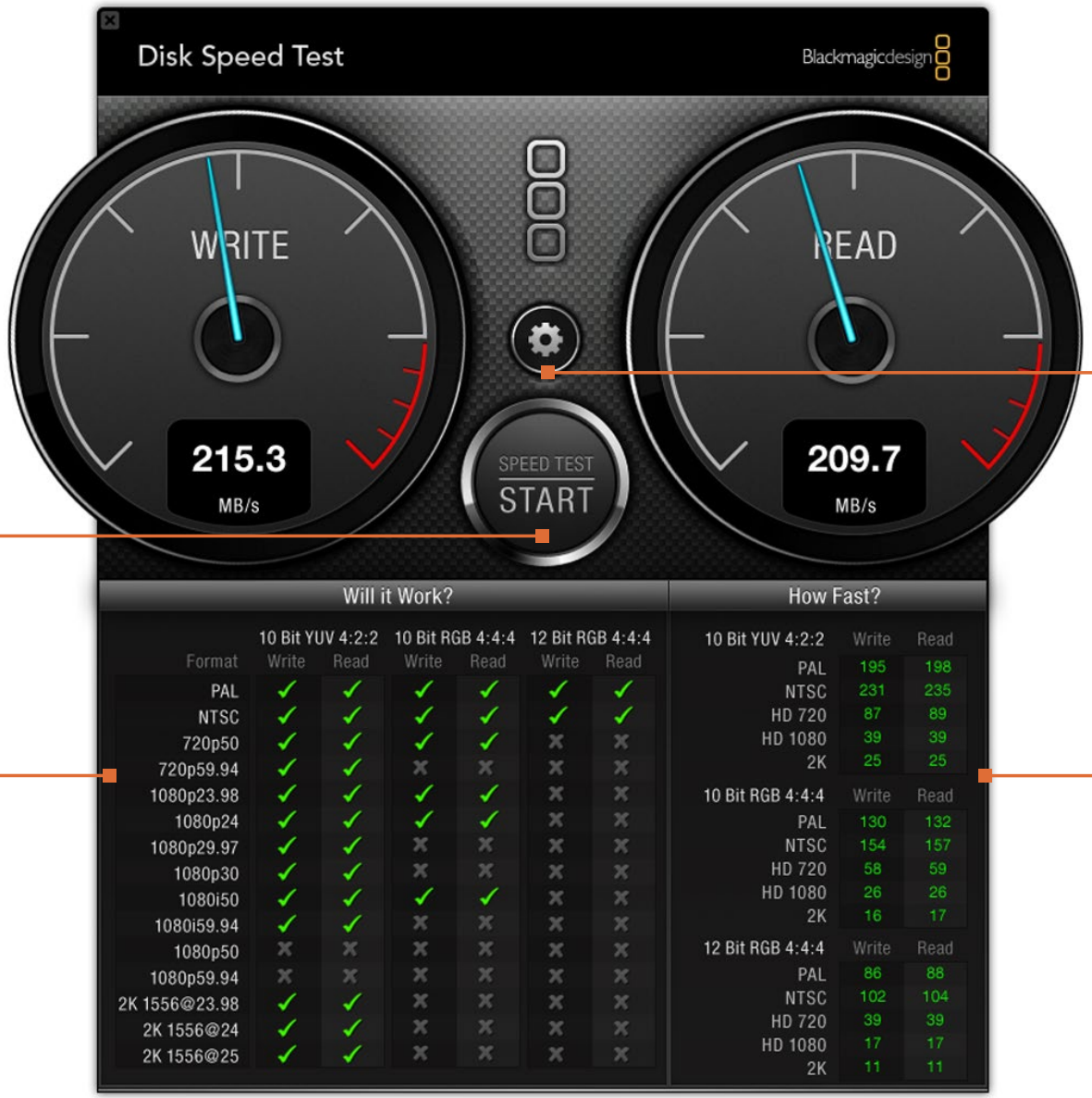
Disk Speed Test Help

Click Disk Speed Test Help to launch the PDF manual for Disk Speed Test.

About Disk Speed Test

About Disk Speed Test displays which version of the Disk Speed Test you are running.

Blackmagic Disk Speed Test



Settings

Click this button to access the settings before running a disk speed test

START

Click this button once to start the disk speed test. Click again to stop the test

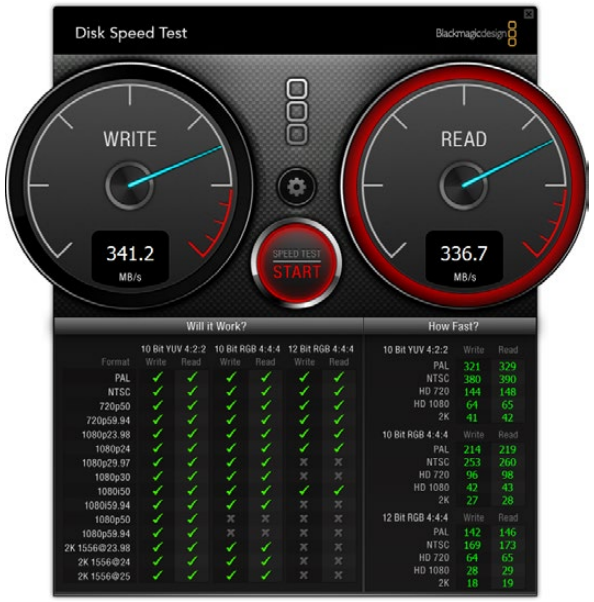
Will it Work?

This panel shows which video formats can be supported by your disk storage

How Fast?

This panel shows results in frames per second (fps)

Blackmagic Disk Speed Test



Disk Speed Test interface during a test

Start

Once you have chosen the desired settings, click the Start button to commence the disk speed test. Disk Speed Test will write a temporary file to the selected target drive. When the file has finished writing, or when 8 seconds has elapsed, Disk Speed Test will stop writing and start reading back the temporary file from the drive.

Disk Speed Test will continue writing and reading the nominated size of stress file until you stop the test by clicking the Start button again.

Will it Work?

The "Will it Work?" panel can help to identify video formats where the Read performance might be significantly different to the Write performance. These differences might mean that you can capture a video format but not play it back in real time or else you can play back a video format but not capture it in real time.

The "Will it Work?" panel shows common video formats and instantly displays a check mark or cross to show if the disk performance will be adequate for the desired video format. We suggest you allow Disk Speed Test to perform several test cycles to help reveal any video formats for which the disk storage performance might be marginal. If you observe a check mark and a cross switching between each other for a video format, this would indicate that the disk storage cannot reliably support the video format.

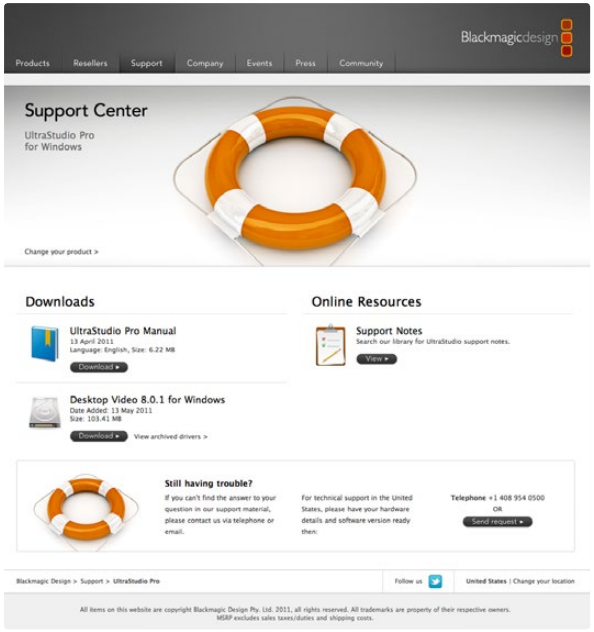
The "How Fast?" results panel shows the frame rates your drive can achieve in frames per second and should be read in conjunction with the "Will it Work?" panel. If the "Will it Work?" panel shows a green check mark for 2K 1556@25fps in 10 Bit YUV 4:2:2, but the "How Fast?" panel shows that a maximum of 25fps will be supported, the disk storage performance is too marginal to be reliable.

How Fast?

After each Read or Write test, the results will be displayed in the "How Fast?" panel. The "How Fast?" results panel also enables you to see how many streams of video can be supported by your disk storage. If the result for "HD 1080" is 70, you can run up to 70 frames of HD 1080 video per second.

This storage speed is capable of supporting the following video formats:

- 2 simultaneous streams of 1080i50 video at 25 fps per stream
- 1 stream of 1080p50 video at 50 fps per stream
- 1 stream of 1080p59.94 video at 59.94 fps per stream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MSRP excludes sales taxes/duties and shipping costs.

Getting Help

The fastest way to obtain help is to go to the Blackmagic Design online support pages and check the latest support material available for your Blackmagic Design video hardware.

Blackmagic Design online support pages

The latest manual, software and support notes can be found at the Blackmagic Support Center at www.blackmagicdesign.com/support.

Contacting Blackmagic Design support

If you can't find the help you need in our support material, please use the "Send request" button, on the support page for your hardware model, to email a support request. Alternatively call your nearest Blackmagic Design support office at www.blackmagicdesign.com/company.

Checking the version currently installed

To check which version of Desktop Video software is installed on your computer, open the Blackmagic Design Desktop Video system preferences. The version number appears prominently in the title bar.

- On Mac OS X, open the System Preferences and look in the “Other” category to locate the Blackmagic Design icon. Click the Blackmagic Design icon to reveal the version number.
- On Windows 7 and Windows 8, open the Control Panel and click on the “Hardware and Sound” category to reveal the Blackmagic Design Control Panel. Click the Blackmagic Design Control Panel to reveal the version number.
- On Linux, go to "Applications" and then "Sound and Video" to locate the Blackmagic Control Panel. Open the control panel to reveal the version number.

How to get the latest updates

After checking the version of Desktop Video installed on your computer, please visit the Blackmagic Support Center at www.blackmagicdesign.com/support to check for the latest updates. While it is usually a good idea to run the latest updates, it is a wise practice to avoid updating any software if you are in the middle of an important project.

Developing custom software using Blackmagic Design hardware

The DeckLink SDK is available to developers who wish to programmatically control Blackmagic video hardware with their own custom software. The DeckLink SDK supports the UltraStudio, DeckLink, Multibridge and Intensity families of products.

The DeckLink SDK provides both low-level control of hardware and high-level interfaces to allow developers to easily perform common tasks. The DeckLink SDK supports technologies including:

- Apple QuickTime
- Microsoft DirectShow
- Apple Core Media
- DeckLink API

Downloading the free Blackmagic Design SDK

The DeckLink SDK is free and can be downloaded from

http://www.blackmagicdesign.com/support/sdks/

Joining the Blackmagic Design developer list

The Blackmagic Developer mailing list is designed for technical questions regarding technologies used by Blackmagic Design, eg QuickTime, Core Media, DirectShow, codecs, APIs, SDKs, etc. The free mailing list is a forum where developers can discuss ideas and problems with other developers. Any subscriber may reply and the Blackmagic Design engineers may also respond when appropriate. You can subscribe to the mailing list at: http://lists.blackmagicdesign.com/mailman/listinfo/bmd-developer

In some cases, we might request a brief outline of the software you are developing if it is not immediately obvious from your domain name that your organization develops video software. Please don't take offence as we're simply trying to keep the list free of spam and viruses as well as end-user customers asking non-development questions, employment agents or sales people trying to promote products on the list. The list is just for developers.

Contacting Blackmagic Design developer assistance

You can also contact us via developer@blackmagicdesign.com if you have any developer related questions or wish to ask questions off the list.

Blackmagic 2K Format – Overview

The latest Blackmagic Design products use the new 3G-SDI video, which allows twice the data rate of traditional HD-SDI video. We thought it would be a really nice idea to add 2K film support, via this new 3G-SDI technology, so we could simplify feature film workflows. With the popularity of Blackmagic Design editing systems worldwide, now thousands of people can benefit from a feature film workflow revolution.

This information includes everything product developers need to know for building native 2K SDI equipment. Of course, all Blackmagic products can be updated, so if the television industry adopts an alternative SDI-based film standard, we can add support for that too!

Frame Structure

- Transmitted at 23.98, 24 or 25 frames per second as a Progressive Segmented Frame.
- Active video is 2048 pixels wide by 1556 lines deep.
- Total lines per frame : 1650
- Active words per line are 1535. One word consists of a 10-bit sample for each of the four data streams, i.e. a total of 40 bits. See the diagram named Blackmagic 2K Format - Data Stream Format.
- Total active lines : 1556
- Total words per line : 1875 for 23.98/24Hz and 1800 for 25Hz.
- Fields per frame : 2, 825 lines each
- Active lines located on lines 16-793 (field 1) and 841-1618 (field 2).

Transport Structure

- Based on SMPTE 372M Dual Link mapping and SMPTE 425M-B support for mapping SMPTE 372M into a single 3 Gb/s link.
- Timing reference signals, line number and line CRC insertion is the same as above.
- Optional ancillary data is inserted into both virtual interfaces.
- At present, only audio data is included: as per standard HD audio insertion (SMPTE S299M) the audio data packets are carried on data stream two and audio control packets are carried on data stream one.
- During active video, 10-bit Red, Green and Blue data is sent in the following sequence:

  Data stream 1: Green_1, Green_2, Green_3, Green_5...Green_2047

  Data stream 2: Blue_1, Blue_2, Green_4, Blue_5...Green_2048.

  Data stream 3: Red_1, Blue_3, Blue_4, Red_5...Blue_2048.

  Data stream 4: Red_2, Red_3, Red_4, Red_6...Red_2048.

The diagram, Vertical Timing Reference, shows the vertical timing details with line numbers and Field, Vertical and Horizontal bits for the Timing Reference Signal codes.

The diagram, Data Stream Format, shows the data stream formats around the optional ancillary data section of the horizontal line. Note that each active pixel takes up three samples.

Blackmagic 2K Format – Vertical Timing Reference

		FIELD 1					ACTIVE					
F	1	0	0	0	0	0	0	0	0	0	0	0
V	1	1	1	1	1	1	0	0	0	0	1	1
LINE #	1650	1	2	…	14	15	16	…	792	793	…	825

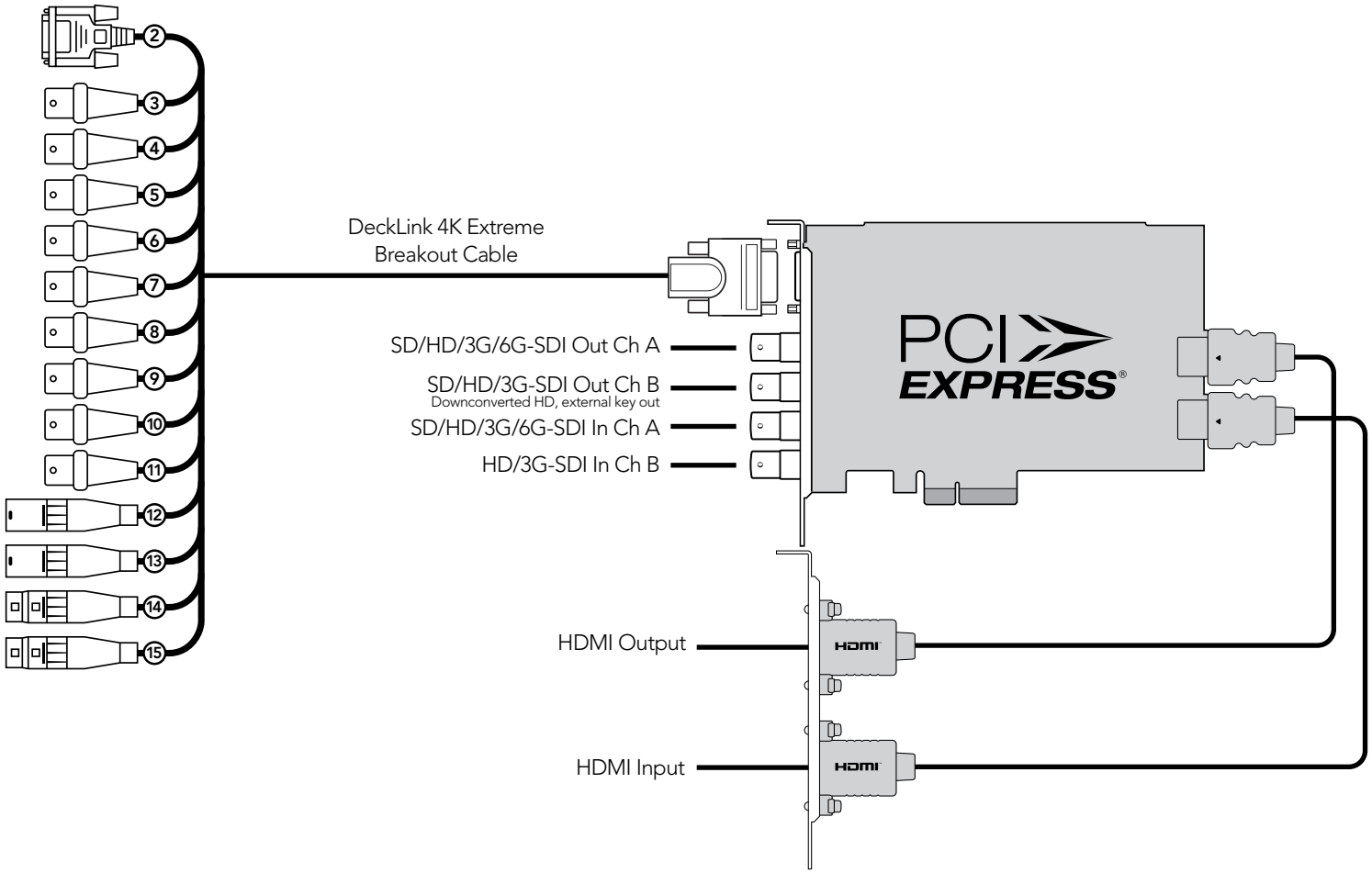
		FIELD 2					ACTIVE					
F	0	1	1	1	1	1	1	1	1	1	1	1
V	1	1	1	1	1	1	0	0	0	0	1	1
LINE #	825	826	827	…	839	840	841	…	1617	1618	…	1650

WORD# 25 PsF	WORD# 23.98/24 PsF	DATA STREAM 4	DATA STREAM 3	DATA STREAM 2	DATA STREAM 1
1795	1870	R2042	R2041	B2041	G2041
1796	1871	R2043	B2043	B2042	G2042
1797	1872	R2044	B2044	G2044	G2043
1798	1873	R2046	R2045	B2045	G2045
1799	1874	R2047	B2047	B2046	G2046
1800	1875	R2048	B2048	G2048	G2047
1	1	EAV(3FFh)	EAV(3FFh)	EAV(3FFh)	EAV(3FFh)
2	2	EAV(000h)	EAV(000h)	EAV(000h)	EAV(000h)
3	3	EAV(000h)	EAV(000h)	EAV(000h)	EAV(000h)
4	4	EAV(XYZh)	EAV(XYZh)	EAV(XYZh)	EAV(XYZh)
5	5	LN0	LN0	LN0	LN0
6	6	LN1	LN1	LN1	LN1
7	7	CRC0	CRC0	CRC0	CRC0
8	8	CRC1	CRC1	CRC1	CRC1
9	9	200	040	ANC/AUDIO DATA	ANC/AUDIO DATA
…	…	…	…		
260	335	200	040		
261	336	SAV(3FFh)	SAV(3FFh)	SAV(3FFh)	SAV(3FFh)
262	337	SAV(000h)	SAV(000h)	SAV(000h)	SAV(000h)
263	338	SAV(000h)	SAV(000h)	SAV(000h)	SAV(000h)
264	339	SAV(XYZh)	SAV(XYZh)	SAV(XYZh)	SAV(XYZh)
265	340	R2	R1	B1	G1
266	341	R3	B3	B2	G2
267	342	R4	B4	G4	G3
268	343	R6	R5	B5	G5

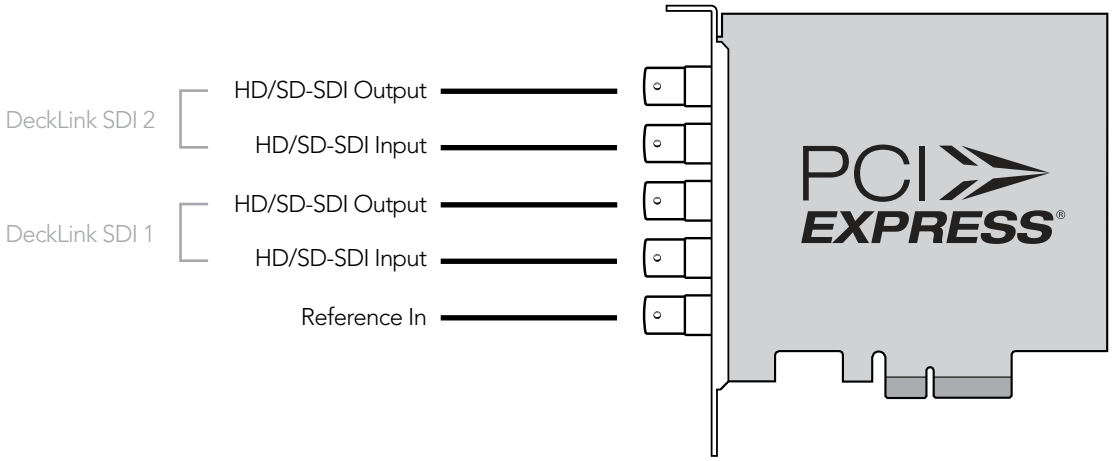
DeckLink 4K Extreme

SDI inputs and outputs support 3G-SDI and 6G-SDI.

2. Deck Control
3. R-Y In
4. Y In
5. B-Y In
6. Ref In
7. R-Y Out
8. Y Out
9. B-Y Out
10. AES/EBU Out
11. AES/EBU In
12. Audio Out Left
13. Audio Out Right
14. Audio In Left
15. Audio In Right

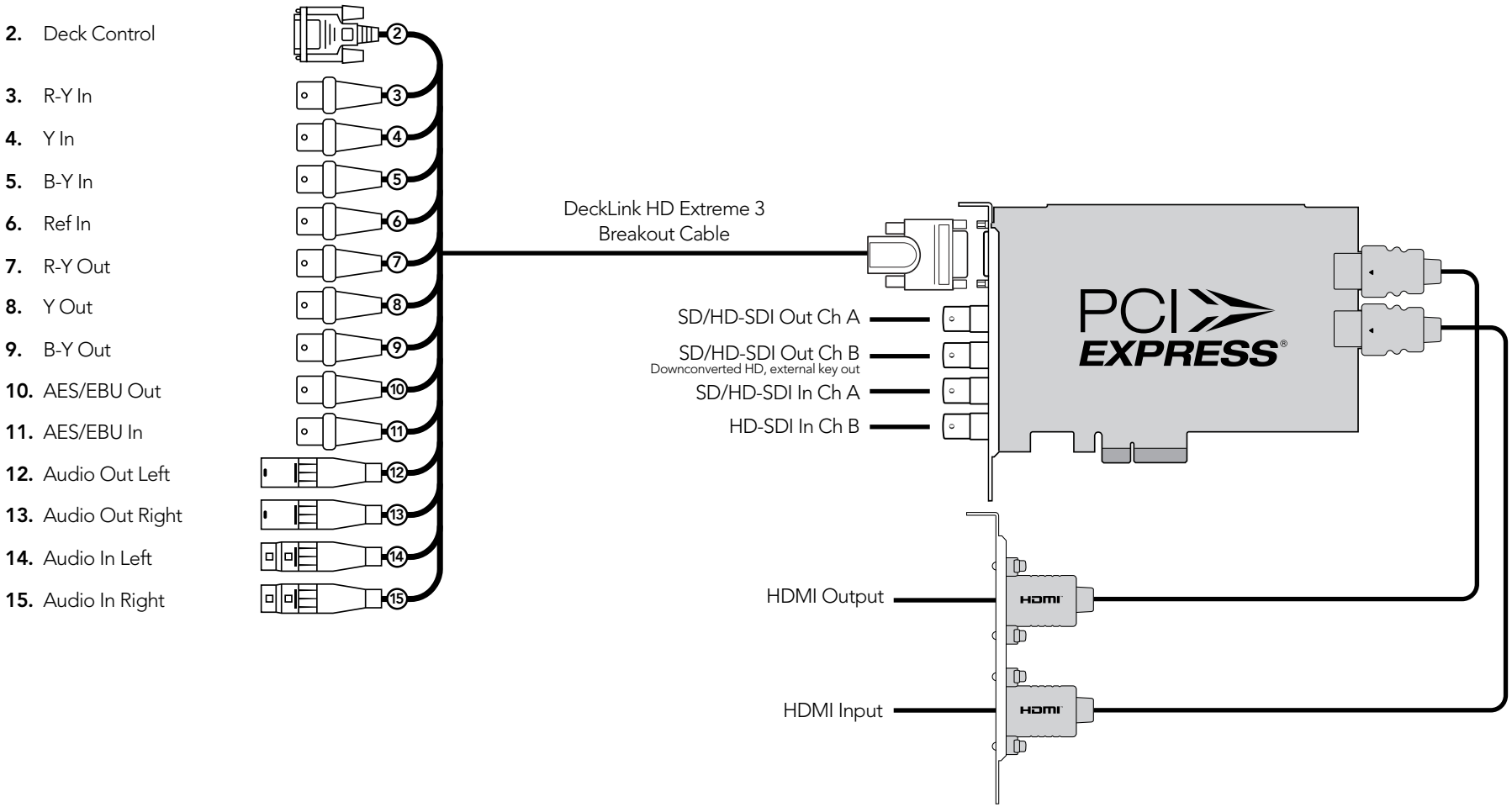


DeckLink Duo



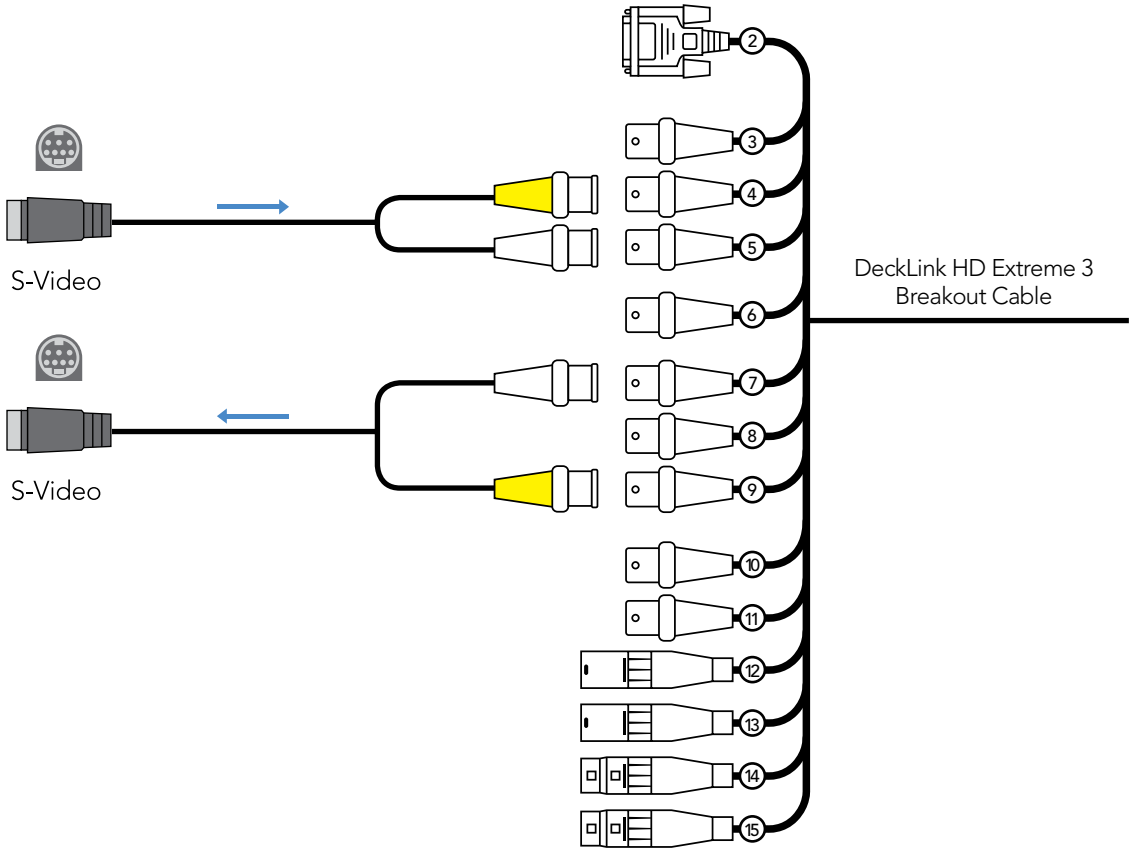
DeckLink HD Extreme 3D+

All SDI inputs and outputs support 3G-SDI and 2K.

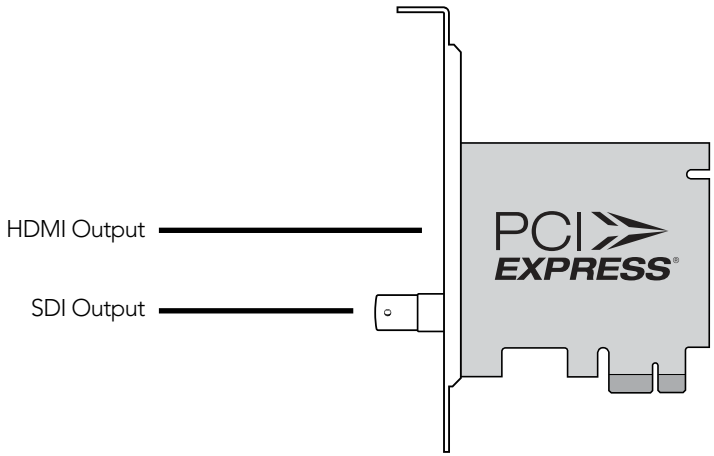


DeckLink HD Extreme 3D+. Connecting to S-Video

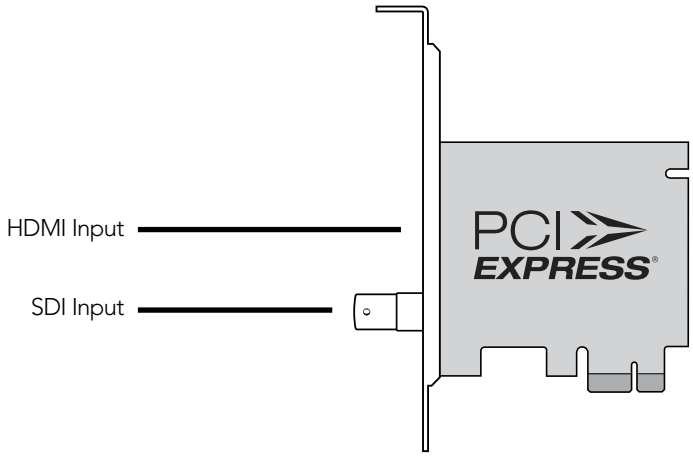
This example shows the DeckLink HD Extreme 3 Breakout Cable connecting to S-video adapter cables.



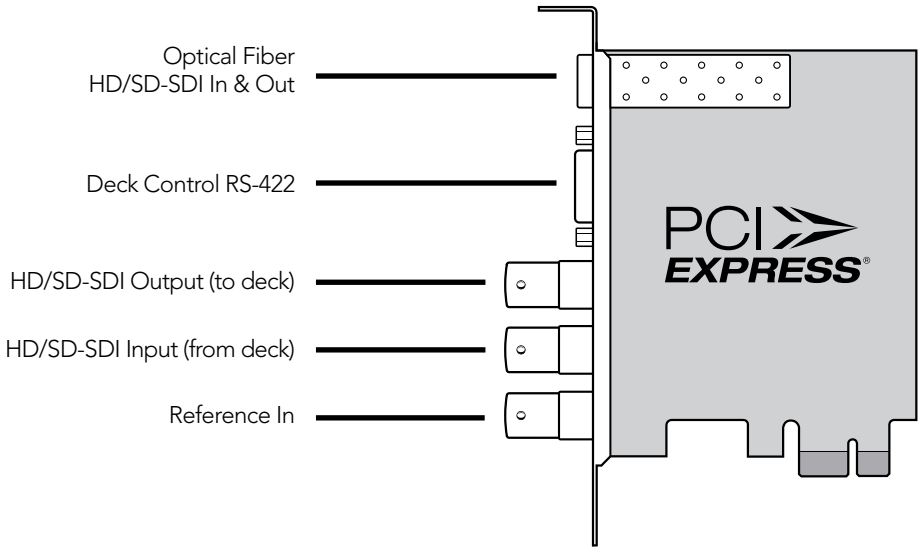
DeckLink Mini Monitor



DeckLink Mini Recorder

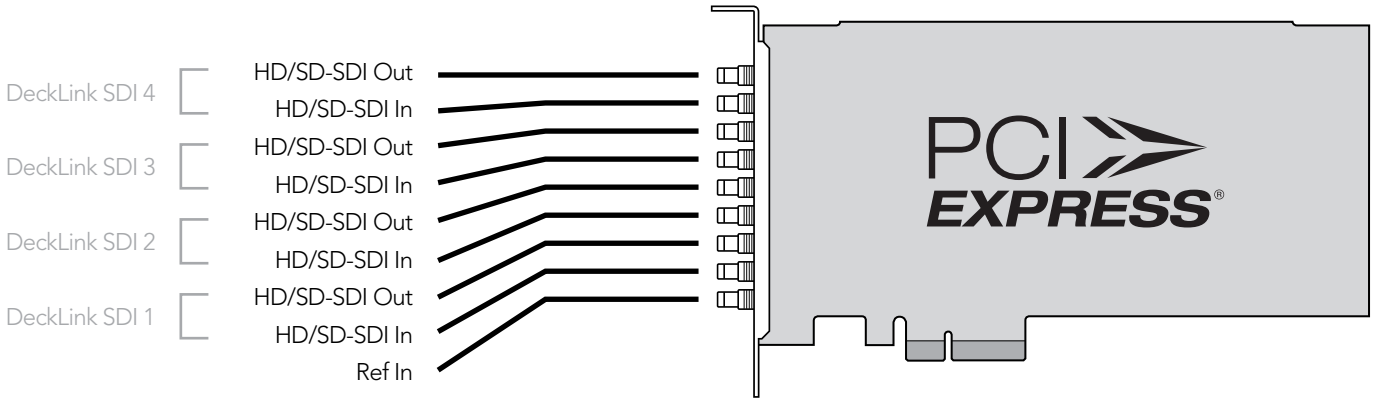


DeckLink Optical Fiber

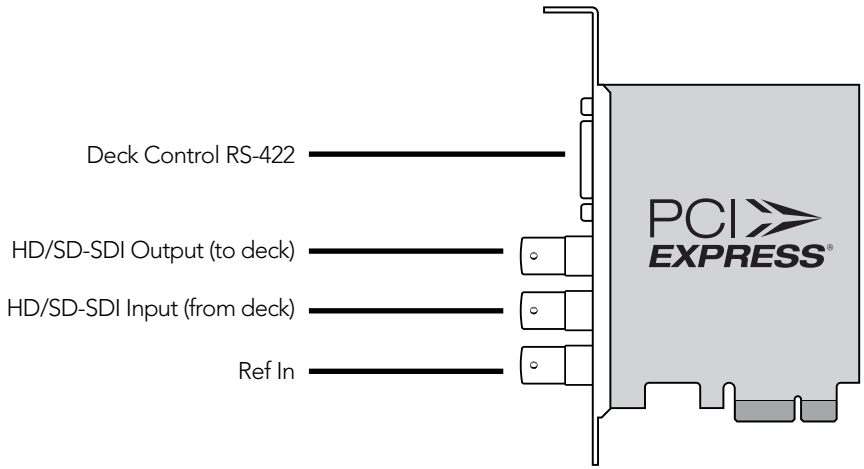


DeckLink Quad

DeckLink Quad uses DIN 1.0/2.3 rather than larger BNC type connectors.

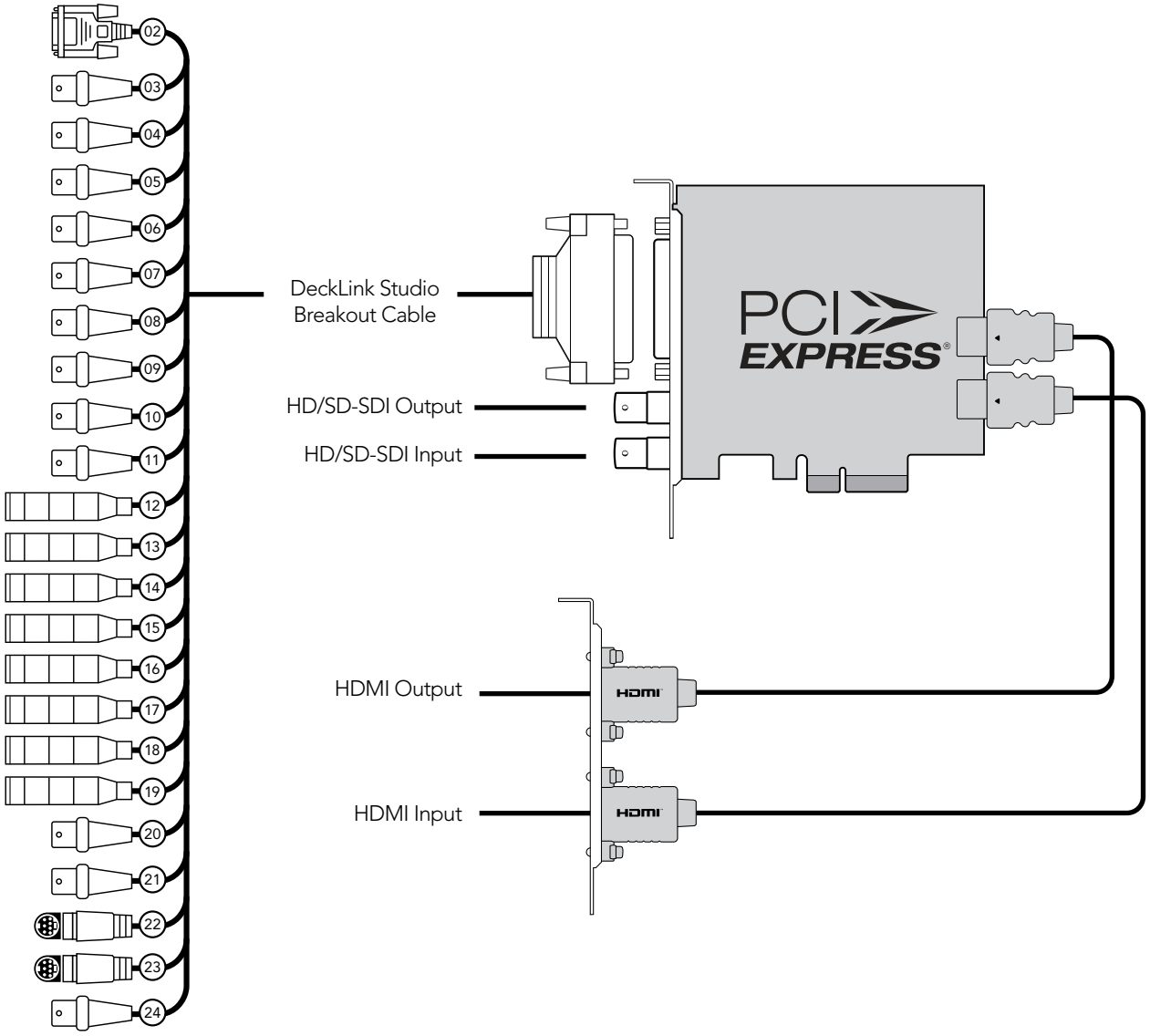


DeckLink SDI

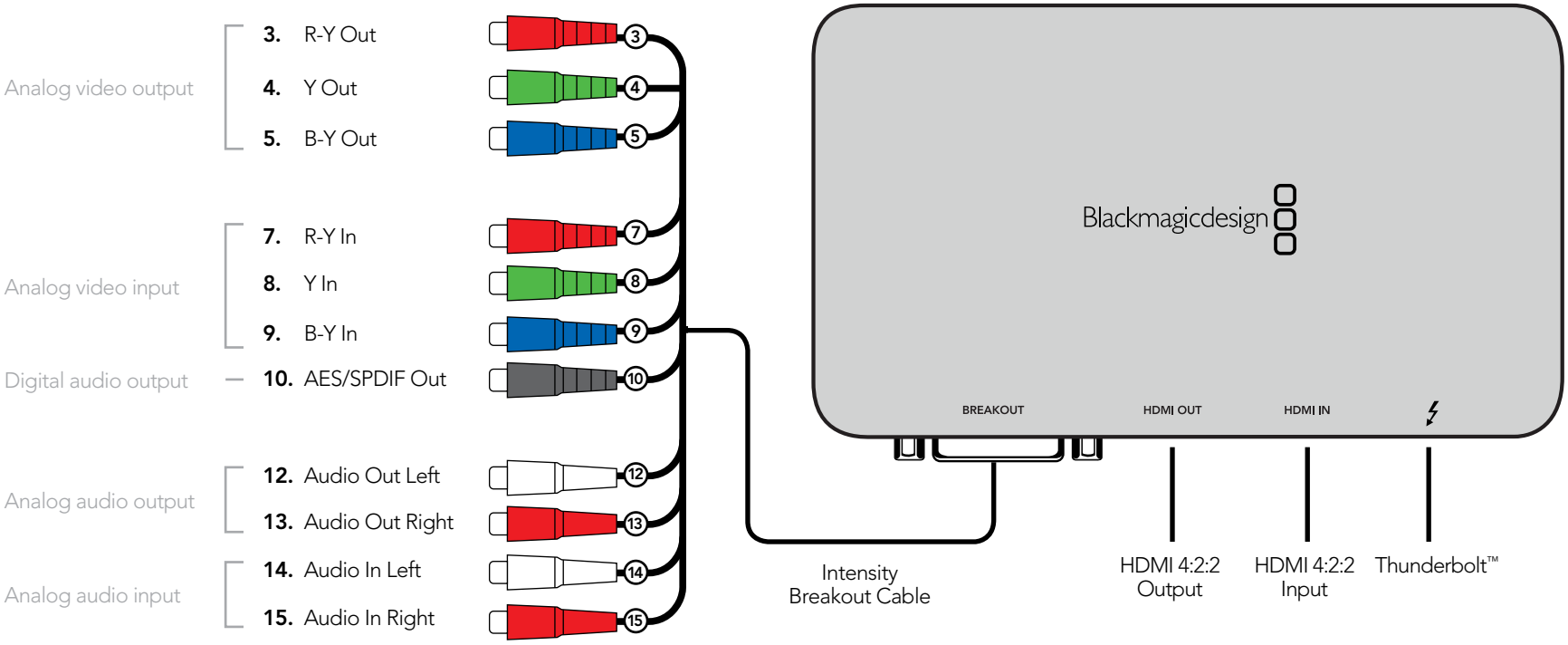


DeckLink Studio 2

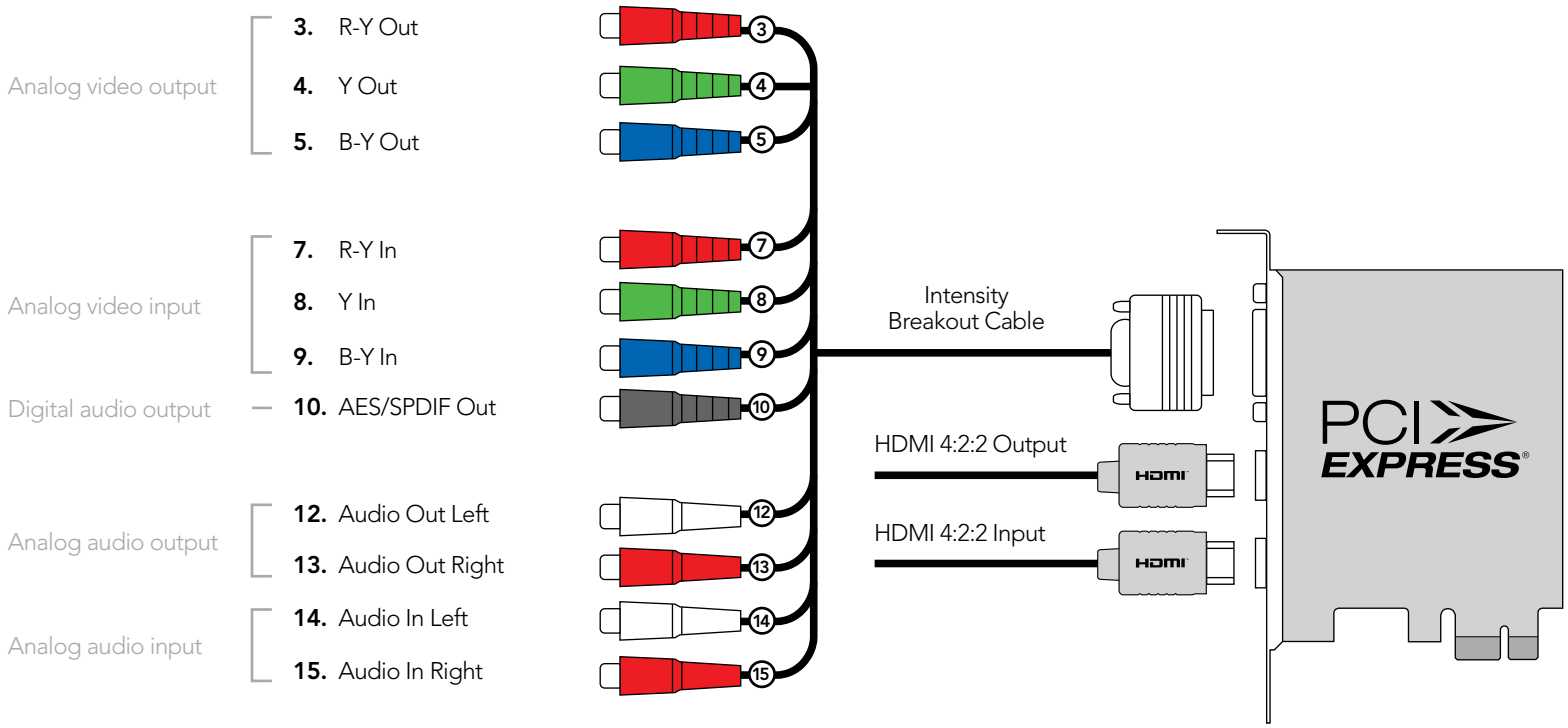
2. RS-422 Deck Control
3. R-Y Out
4. Y Out
5. B-Y Out
6. Ref In
7. R-Y In
8. Y In
9. B-Y In
10. AES / EBU Out CH1&2
11. AES / EBU In CH1&2
12. Analog Audio Out 1
13. Analog Audio Out 2
14. Analog Audio In 1
15. Analog Audio In 2
16. Analog Audio In 3
17. Analog Audio In 4
18. Analog Audio Out 3 or AES/EBU CH3&4 Out
19. Analog Audio Out 4 or AES/EBU CH5&6 Out
20. Composite In
21. Composite Out
22. S-Video In
23. S-Video Out
24. Standard Definition SDI Out



Intensity Extreme

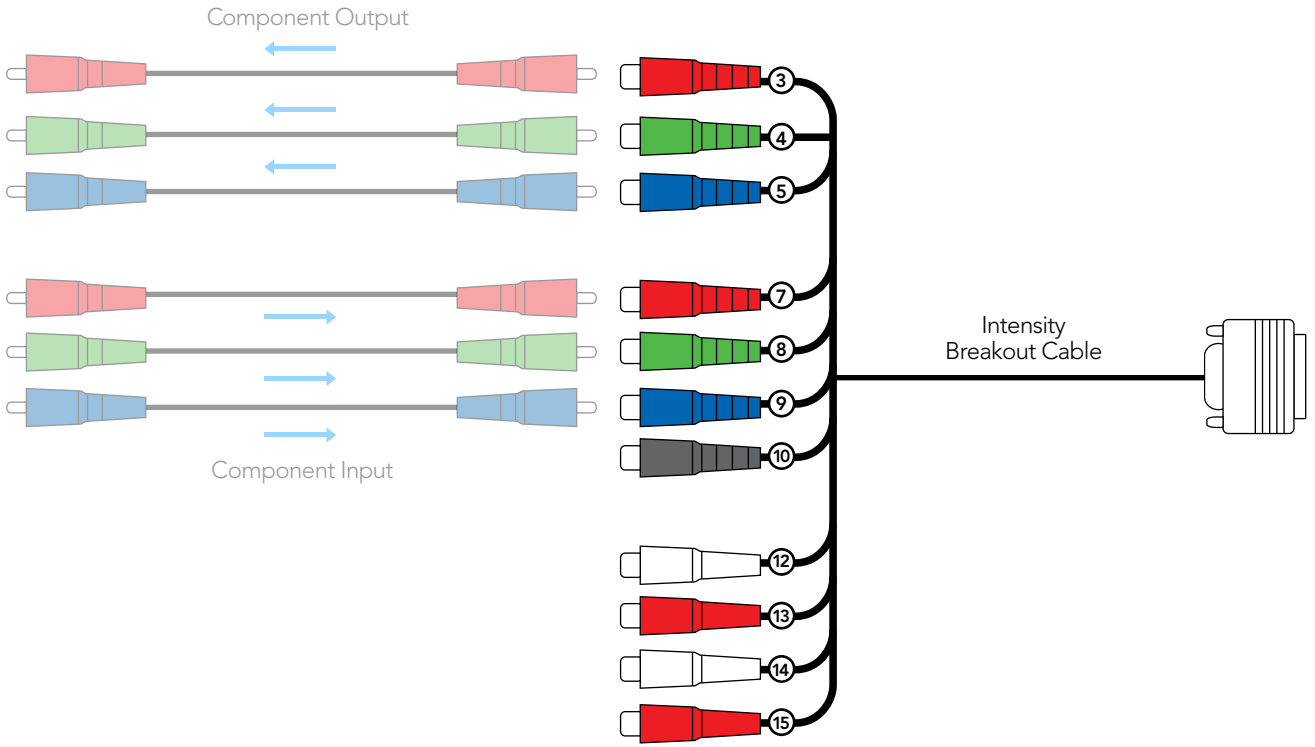


Intensity Pro



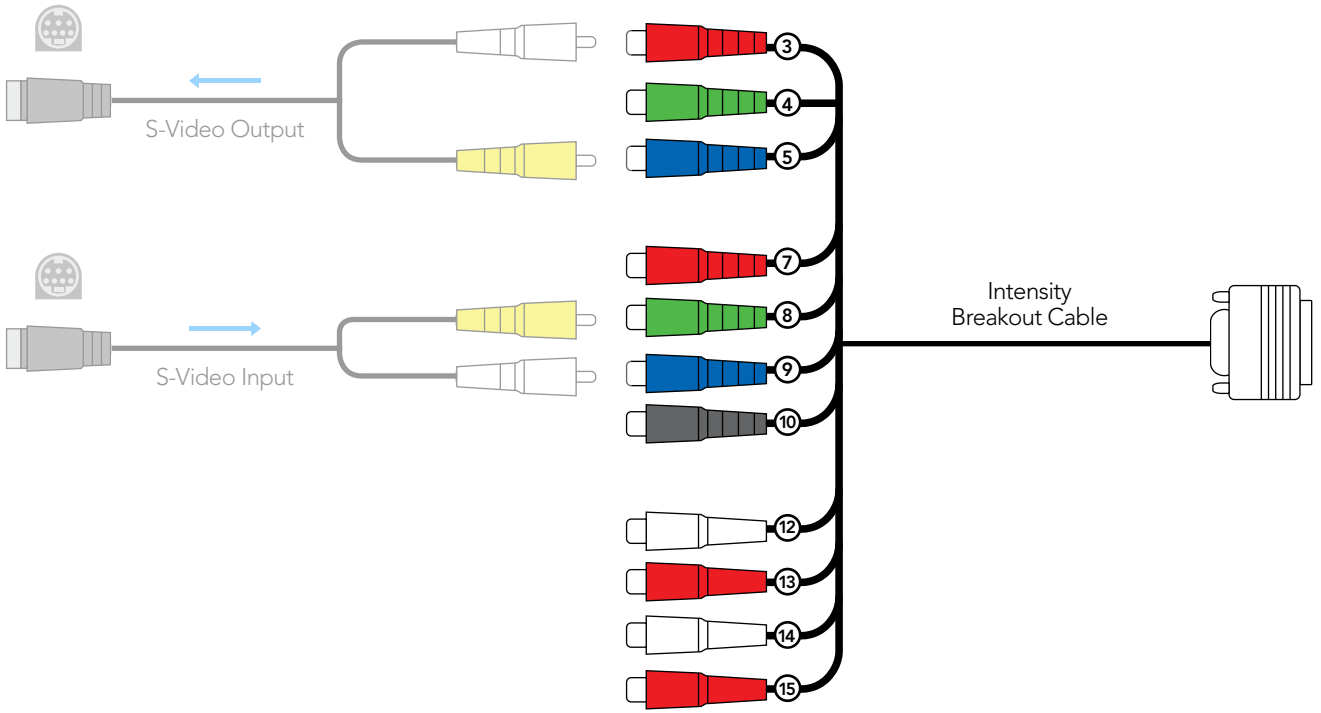
Intensity Breakout Cable: Component Analog Video

Intensity Pro and Intensity Extreme include an Intensity Breakout Cable with many analog connections. The high quality component analog video RCA connectors on the Intensity Breakout Cable can be used for component capture and playback, in high definition or standard definition, as illustrated below.



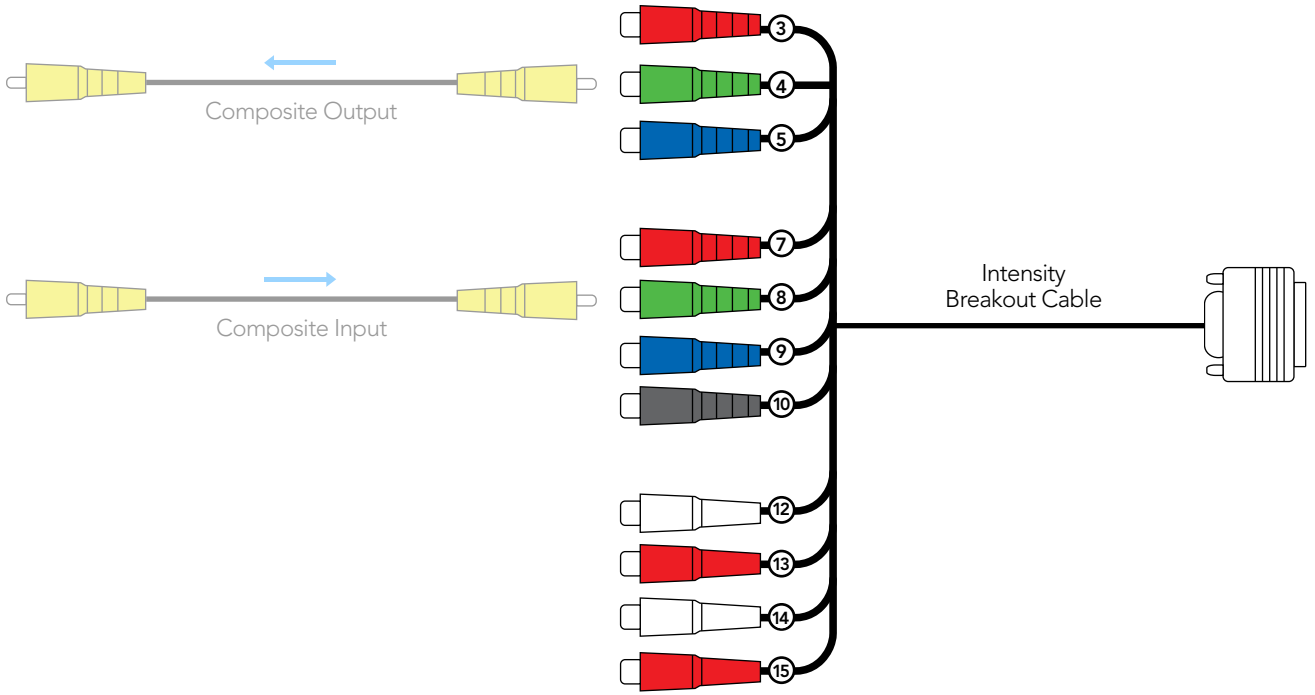
Intensity Breakout Cable: S-Video Analog Video

Intensity Pro and Intensity Extreme include an Intensity Breakout Cable with many analog connections. The high quality analog video RCA connectors on the Intensity Breakout Cable can be used for S-Video capture and playback using a simple S-Video to dual RCA adapter cable (not included), as illustrated below. S-Video supports standard definition video.

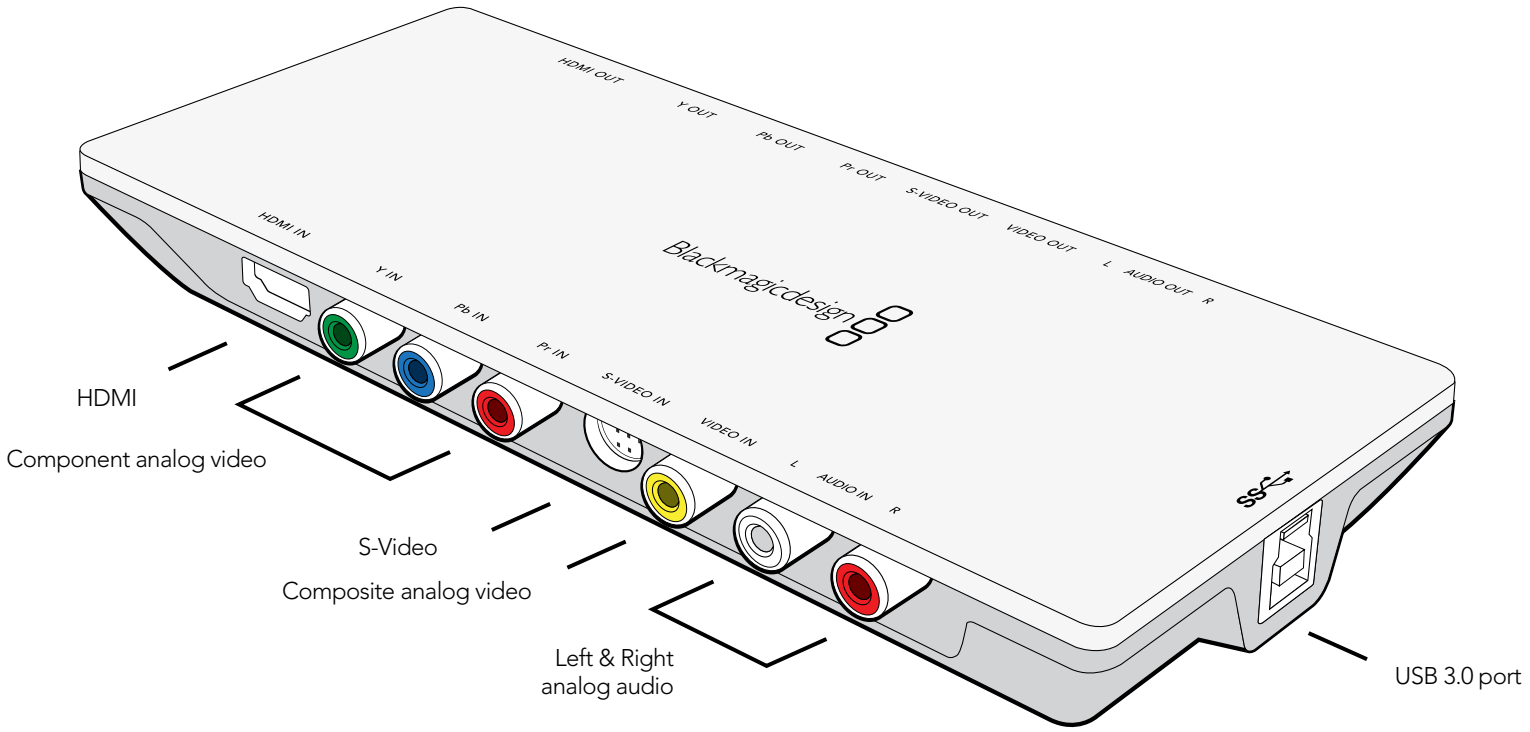


Intensity Breakout Cable: Composite Analog Video

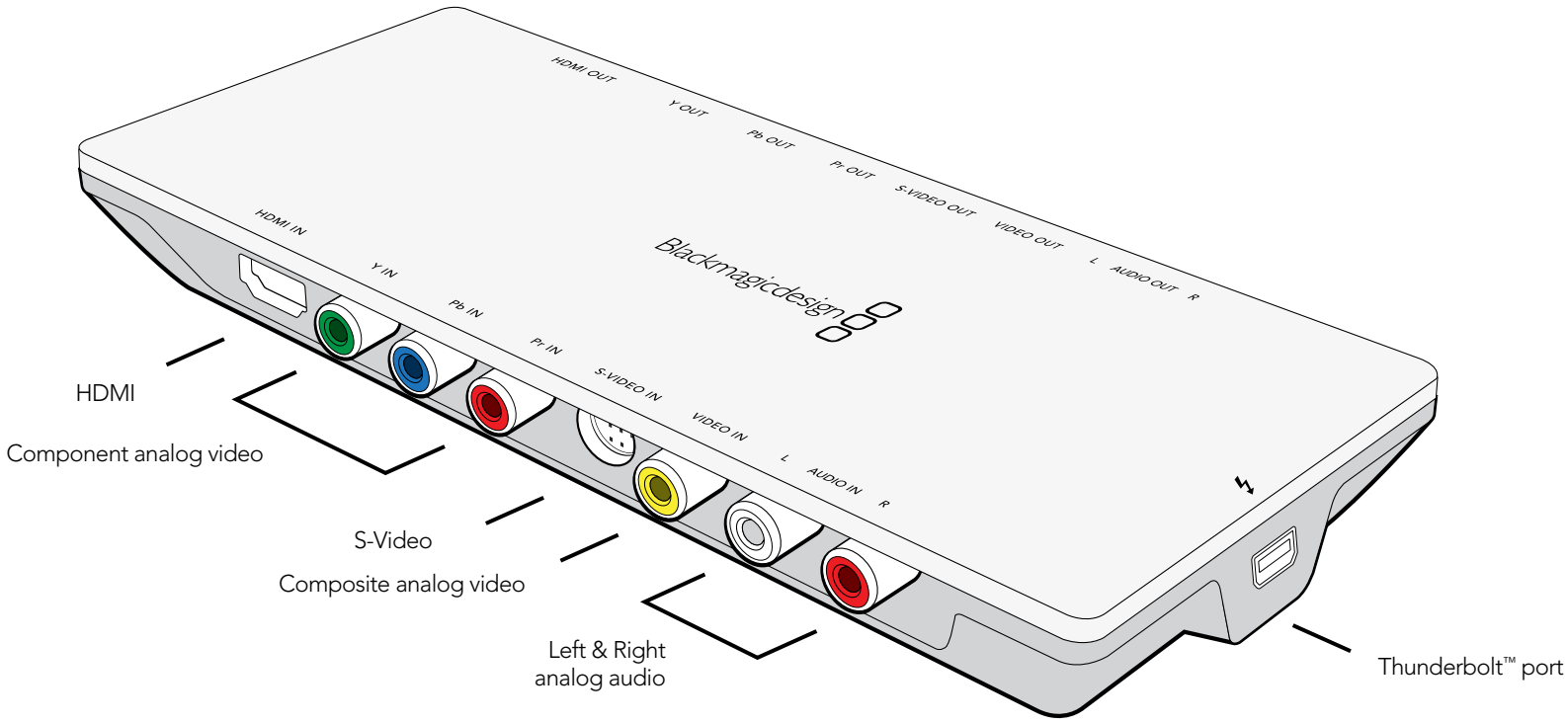
Intensity Pro and Intensity Extreme include an Intensity Breakout Cable with many analog connections. The high quality analog video RCA connectors on the Intensity Breakout Cable can be used for NTSC/PAL capture and playback of composite video. Simply connect consumer RCA cables to the Intensity Breakout Cable as illustrated below. Composite video supports standard definition video.



Intensity Shuttle for USB 3.0

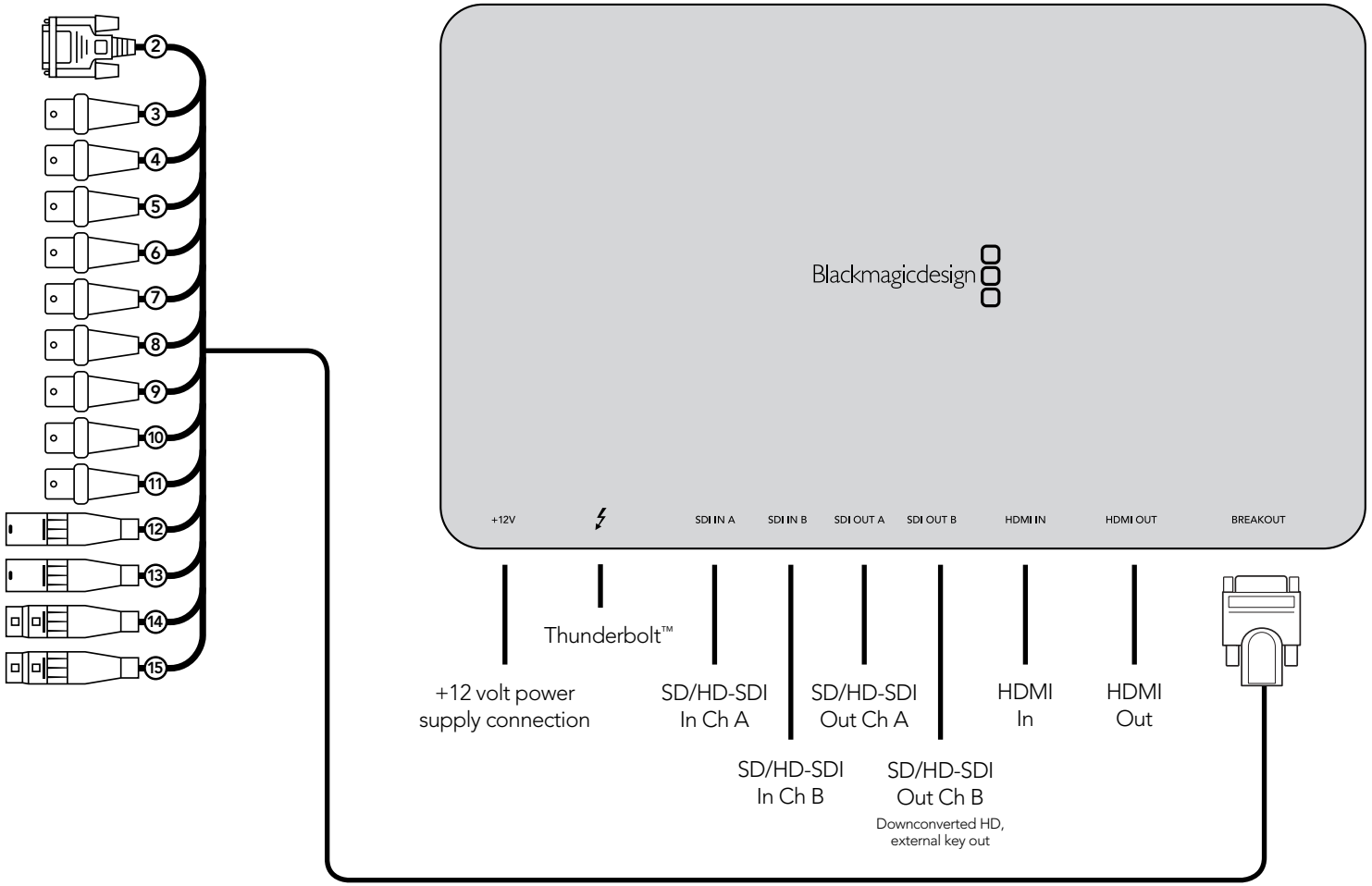


Intensity Shuttle for Thunderbolt™



UltraStudio 3D

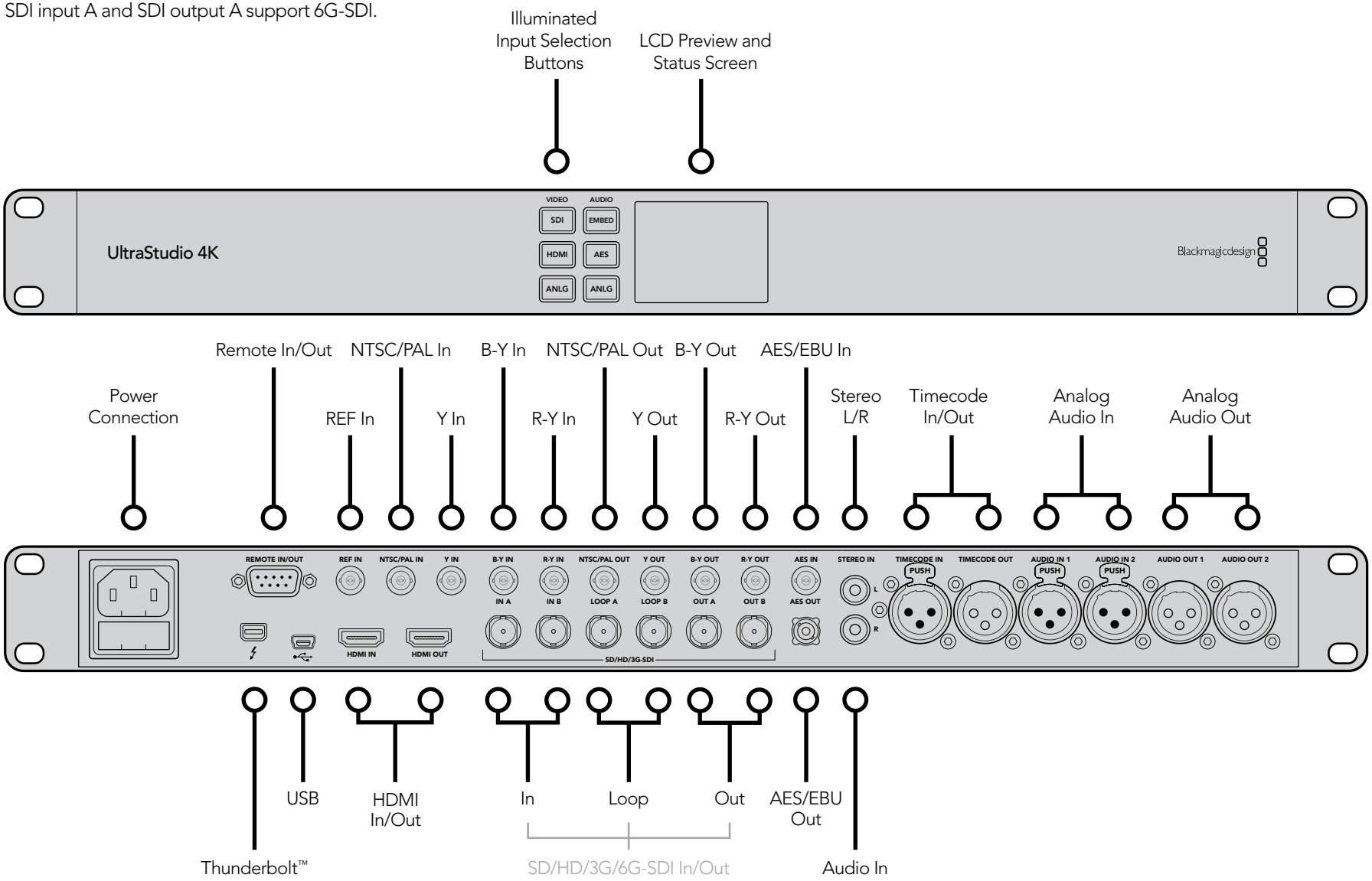
2. Deck Control
3. R-Y In
4. Y In
5. B-Y In
6. Ref In
7. R-Y Out
8. Y Out
9. B-Y Out
10. AES/EBU Out
11. AES/EBU In
12. Audio Out Left
13. Audio Out Right
14. Audio In Left
15. Audio In Right



UltraStudio 3D Breakout Cable

UltraStudio 4K

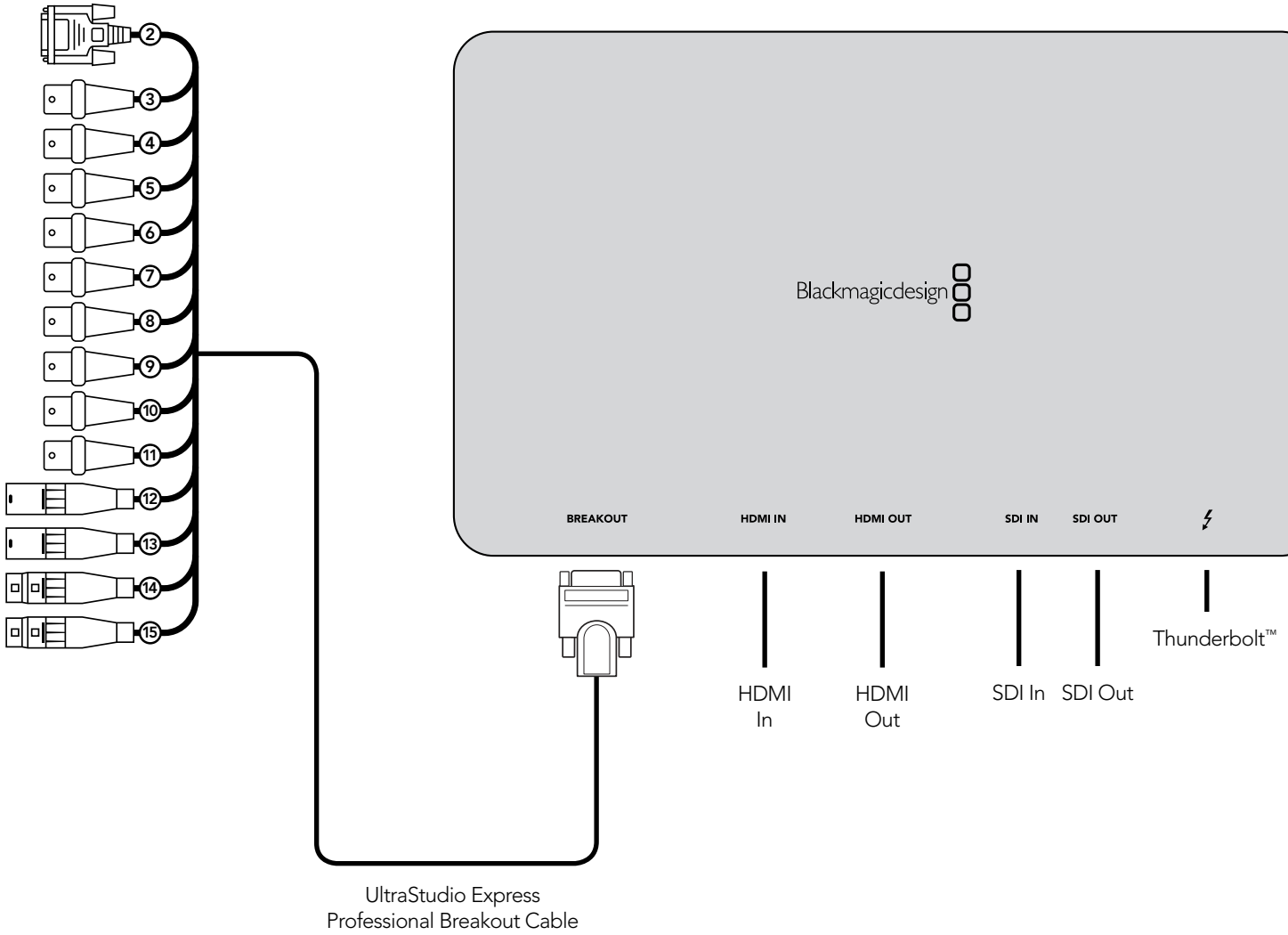
SDI input A and SDI output A support 6G-SDI.



UltraStudio Express and Professional Breakout Cable

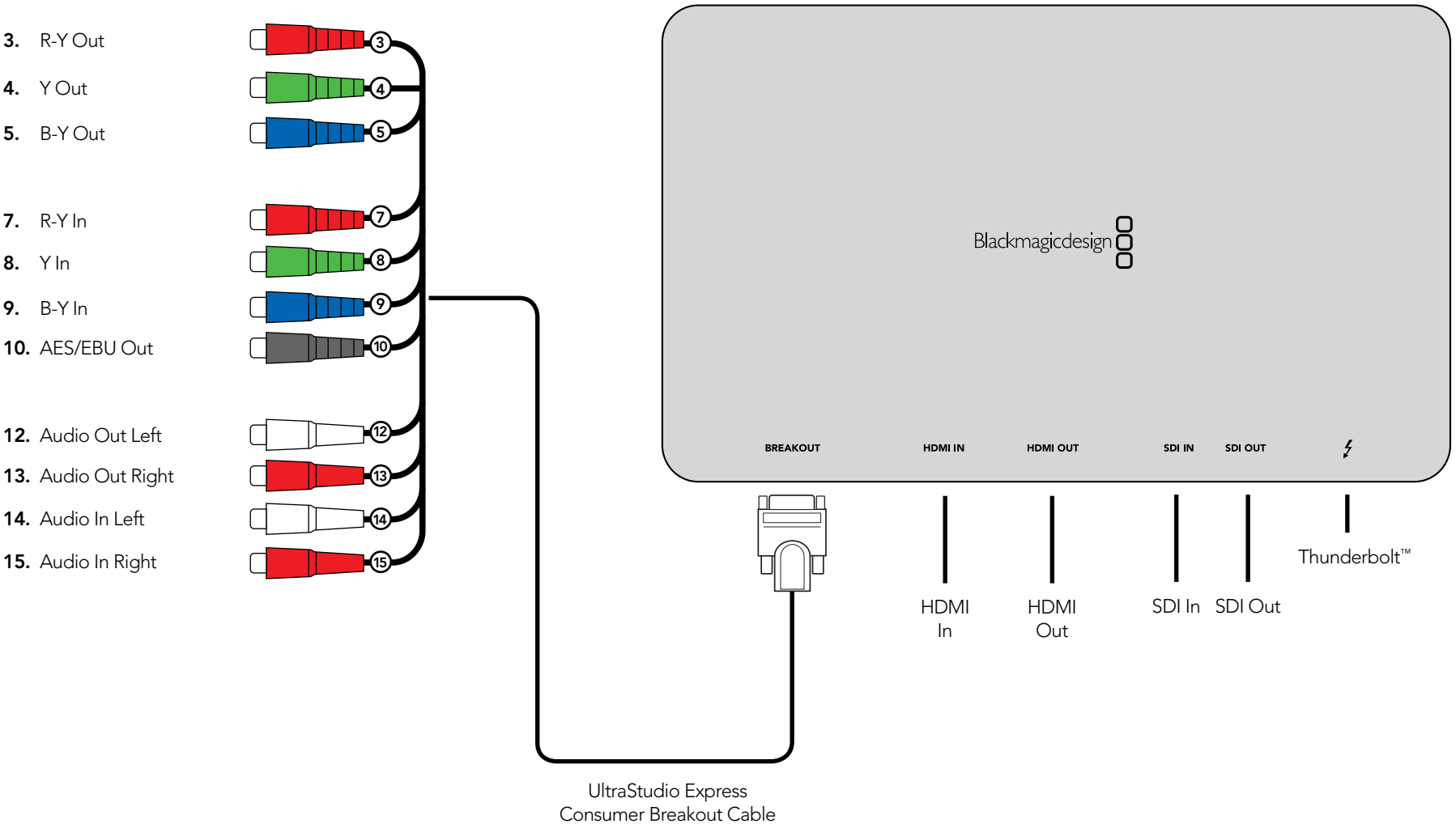
The cable numbering is the same on both the Professional and Consumer Breakout Cables so it's easy to use either cable. For example, component video output uses cables 3, 4 and 5 on both breakout cables.

2. Deck Control
3. R-Y Out
4. Y Out
5. B-Y Out
6. Ref In
7. R-Y In
8. Y In
9. B-Y In
10. AES/EBU Out
11. AES/EBU In
12. Audio Out Left
13. Audio Out Right
14. Audio In Left
15. Audio In Right



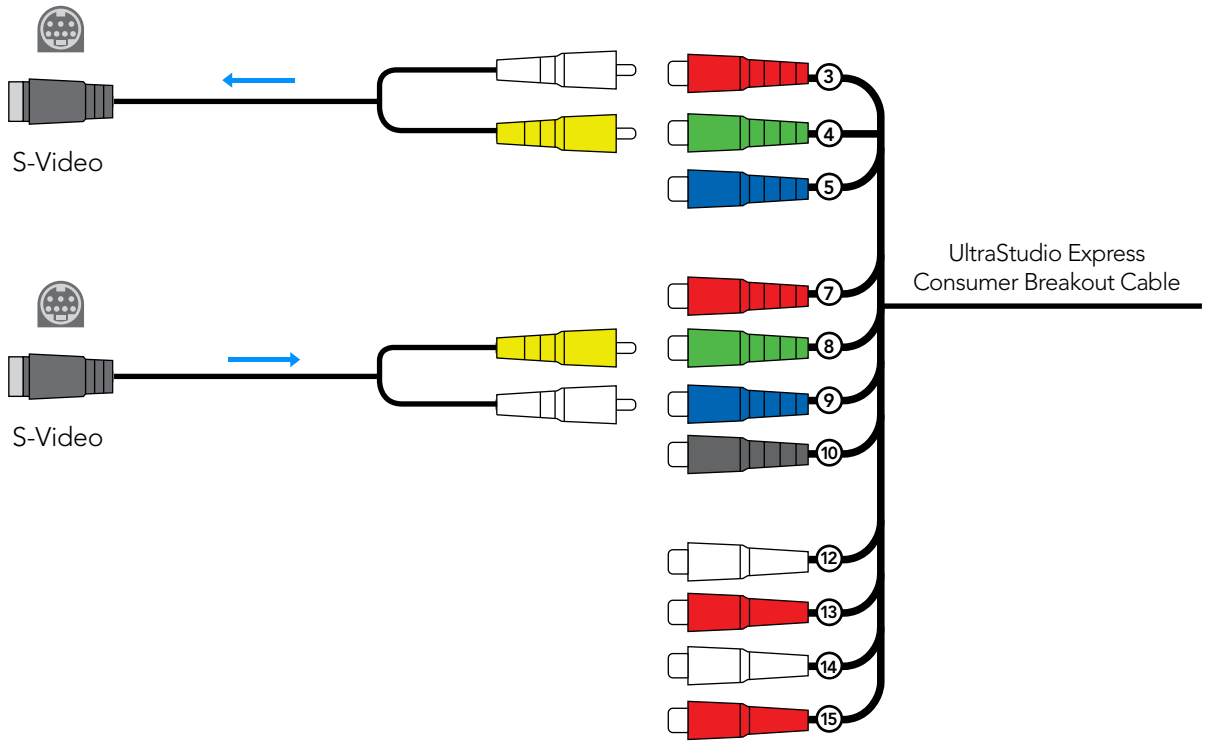
UltraStudio Express and Consumer Breakout Cable

The cable numbering is the same on both the Professional and Consumer Breakout Cables so it's easy to use either cable. For example, component video output uses cables 3, 4 and 5 on both breakout cables.

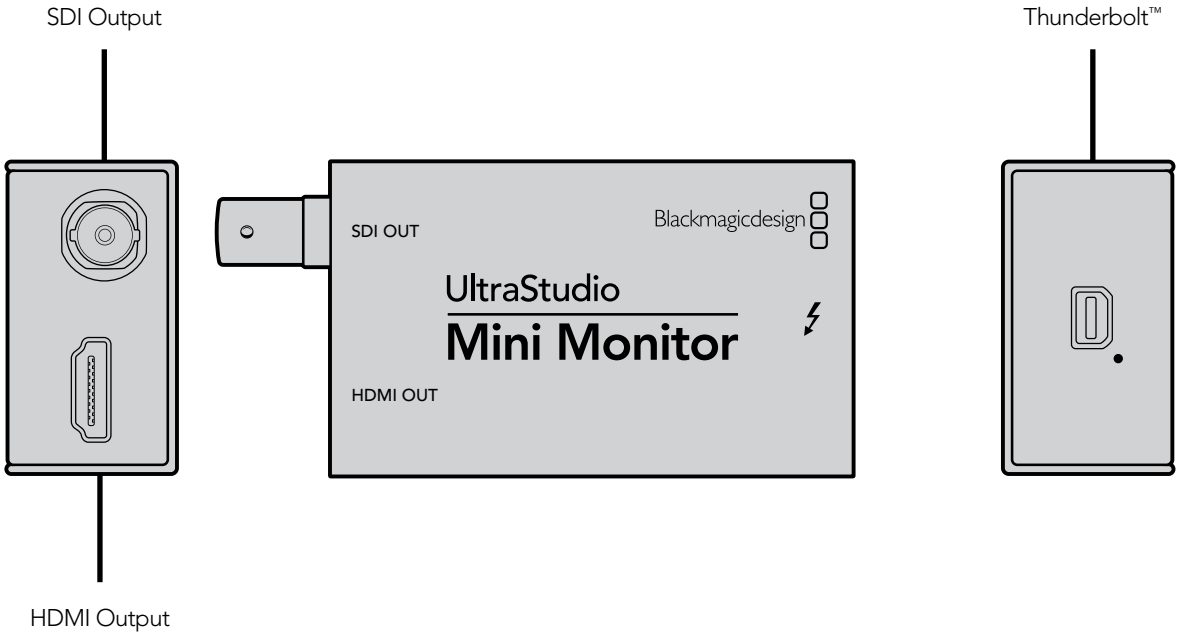


UltraStudio Express - connecting to S-Video

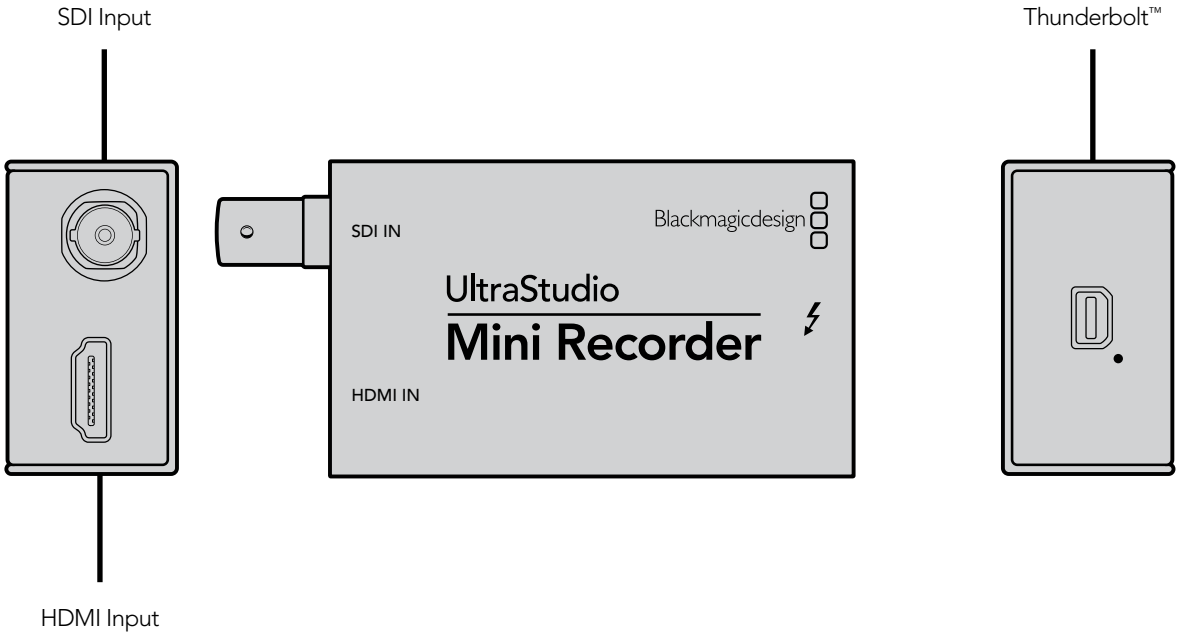
This example shows the UltraStudio Express Consumer Breakout Cable connecting to S-video adapter cables. The Professional Breakout Cable can also be used with S-video adapter cables. The numbering on the cables is the same on both the Consumer and Professional Breakout Cables so it's easy to use either cable for S-video.



UltraStudio Mini Monitor

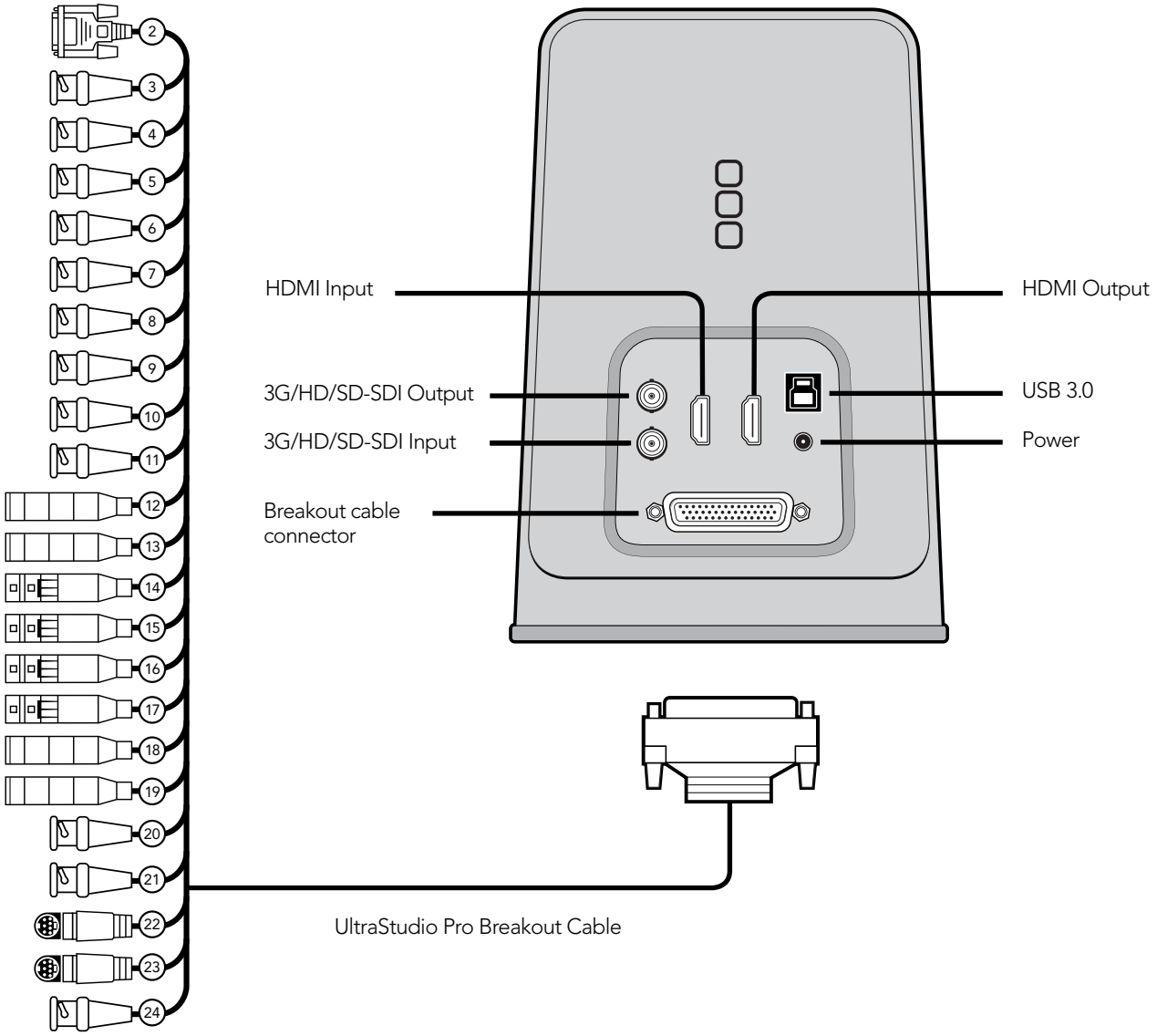


UltraStudio Mini Recorder

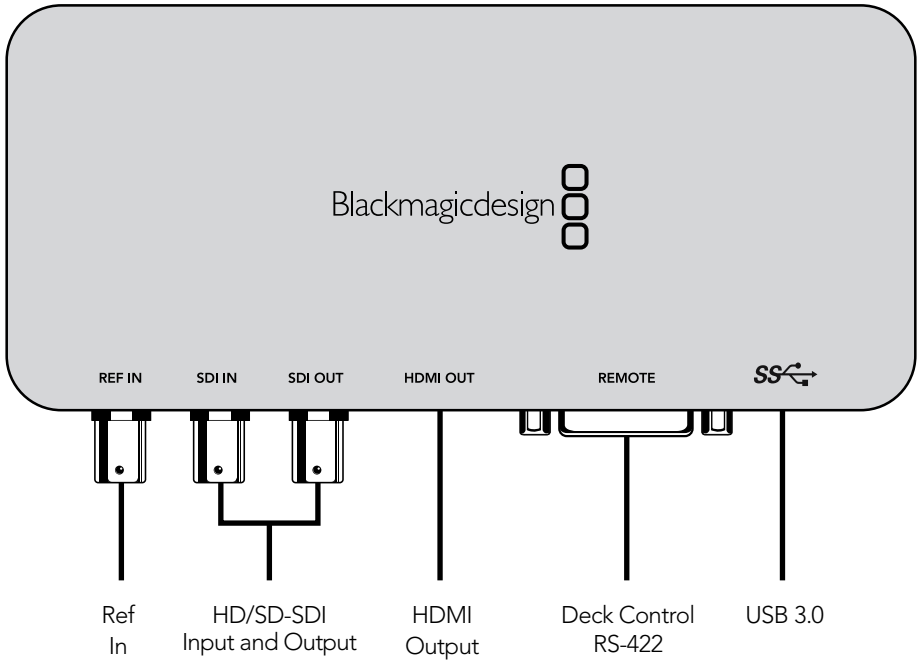


UltraStudio Pro

2. RS-422 Deck Control
3. R-Y Out
4. Y Out
5. B-Y Out
6. Ref In
7. R-Y In
8. Y In
9. B-Y In
10. AES / EBU Out CH1&2
11. AES / EBU In CH1&2
12. Analog Audio Out 1
13. Analog Audio Out 2
14. Analog Audio In 1
15. Analog Audio In 2
16. Analog Audio In 3
17. Analog Audio In 4
18. Analog Audio Out 3 or AES/EBU CH3&4 Out
19. Analog Audio Out 4 or AES/EBU CH5&6 Out
20. Composite In
21. Composite Out
22. S-Video In
23. S-Video Out
24. Standard Definition SDI Out



UltraStudio SDI



Caution label

Warnetikett

Avertissement

Caution: Risk of Electric Shock

On the UltraStudio 4K enclosure you will see a yellow warning label marked 'Caution: Risk of Electric Shock'. This is intended to warn users that there may be the presence of uninsulated "dangerous" voltage within the UltraStudio 4K enclosure which may be of sufficient magnitude to constitute a risk of electric shock to the user. Blackmagic Design advises you not to open the UltraStudio 4K unit, but rather contact your nearest Blackmagic Design service center should assistance be required.

Achtung: Stromschlaggefahr

Auf dem UltraStudio 4K-Gehäuse befindet sich ein gelbes Warnetikett mit der Aufschrift 'Caution: Risk of Electric Shock'. Dieses warnt den Benutzer vor einer möglichen, nicht isolierten, "gefährlichen" Spannung innerhalb des UltraStudio 4K-Gehäuses, die einen Elektroschock verursachen kann. Blackmagic Design empfiehlt das Gehäuse des UltraStudio 4K nicht selbst zu öffnen, sondern bei Hilfebedarf das nächstgelegene Blackmagic Design Servicecenter zu kontaktieren.

Attention: Risque de choc électrique

Sur le boîtier du UltraStudio 4K, vous verrez une étiquette d'avertissement de couleur jaune sur laquelle est inscrit « Attention : Risque de choc électrique ». Cette mise en garde est destinée à avertir les utilisateurs de la présence possible d'une tension « dangereuse » non isolée à l'intérieur du boîtier du UltraStudio 4K, laquelle tension pouvant avoir une amplitude suffisante pour constituer un risque de choc électrique à l'utilisateur. Blackmagic Design vous déconseille donc d'ouvrir l'unité UltraStudio 4K, et vous recommande de contacter votre centre de service Blackmagic Design le plus proche en cas de nécessité.

Limited Warranty

Blackmagic Design warrants that UltraStudio, DeckLink and Multibridge family products will be free from defects in materials and workmanship for a period of 36 months from the date of purchase excluding connectors, cables, cooling fans, fiber optic modules, fuses, keyboards and batteries which will be free from defects in materials and workmanship for a period of 12 months from the date of purchase. Blackmagic Design warrants that Intensity family products will be free from defects in materials and workmanship for a period of 12 months from the date of purchase. If a product proves to be defective during this warranty period, Blackmagic Design, at its option, either will repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, you the Customer, must notify Blackmagic Design of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. The Customer shall be responsible for packaging and shipping the defective product to a designated service center nominated by Blackmagic Design, with shipping charges pre paid. Customer shall be responsible for paying all shipping changes, insurance, duties, taxes, and any other charges for products returned to us for any reason.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Blackmagic Design shall not be obligated to furnish service under this warranty: a) to repair damage resulting from attempts by personnel other than Blackmagic Design representatives to install, repair or service the product, b) to repair damage resulting from improper use or connection to incompatible equipment, c) to repair any damage or malfunction caused by the use of non Blackmagic Design parts or supplies, or d) to service a product that has been modified or integrated with other products when the effect of such a modification or integration increases the time or difficulty of servicing the product. THIS WARRANTY IS GIVEN BY BLACKMAGIC DESIGN IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED. BLACKMAGIC DESIGN AND ITS VENDORS DISCLAIM ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. BLACKMAGIC DESIGN'S RESPONSIBILITY TO REPAIR OR REPLACE DEFECTIVE PRODUCTS IS THE WHOLE AND EXCLUSIVE REMEDY PROVIDED TO THE CUSTOMER FOR ANY INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES IRRESPECTIVE OF WHETHER BLACKMAGIC DESIGN OR THE VENDOR HAS ADVANCE NOTICE OF THE POSSIBILITY OF SUCH DAMAGES. BLACKMAGIC DESIGN IS NOT LIABLE FOR ANY ILLEGAL USE OF EQUIPMENT BY CUSTOMER. BLACKMAGIC IS NOT LIABLE FOR ANY DAMAGES RESULTING FROM USE OF THIS PRODUCT. USER OPERATES THIS PRODUCT AT OWN RISK.

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